The Influence of Financing Structure on Performance of MSMEs in South Africa: "The Valley of Death"

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by

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ABSTRACT

Previous researchers, especially on large enterprises, have revealed that debt financing structure influences enterprise performance. Though the issue has been extensively researched, micro, small, and medium-sized enterprises (MSMEs) have traditionally been operating differently as compared to large enterprises in terms of their financial decisions, ownership and management style, and behaviour. Therefore, this study will explore the gaps encountered by all MSMEs to grow their businesses. These include forms and type of industry, firm size, asset tangibility, and a firm's current assets in relation to its current liabilities and profitability level. The study examines the influence of financing structures on performance of micro, small and medium-sized enterprises (MSMEs) in South Africa. The ordinary least squares (OLS) technique of measurement is applied to examine the effects of financing structure on performance across various industrial sectors in the years 2013, 2014 and 2015.

The findings in this study indicate an increase in the use of leverage to drive the influence of total debt on performance in all industrial sectors of MSMEs in South Africa. From the cross-sectional regression analysis, the results show that financing structure has a negative effect on the profitability of MSMEs, although not absolutely. The findings show that the size of the enterprise, asset tangibility, and the ratio of current assets to current liabilities are the most influential of borrowing decisions in total debt, short-term debt, and long-term debt. A significantly negative effect is observed for long-term debt, while short-term debt (STDR) exhibits a significantly positive effect. Thus the influence on MSMEs' leverage on performance is driven by the usage of short-term debt. The variables of size of the firm, and ratio of current assets to current liabilities, do not have the same effect in all debt levels; the significance is substantially higher for long-term debt than for total debt and short-term debt. On the other hand, our empirical results suggested that transactional costs, and an asymmetric information problem in smaller firms, may lead to a mainly negative influence on size and total debt. The asset structure on profitability observed across the years showed mixed experiences. The ratio of current assets to current liabilities was found to be positive and significant on long-term debt and short-term debt leverage.

Keywords - Total debt, Short-term debt and Long-term debts; financing structure; Micro, Small to Medium-sized Enterprises; South Africa

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GLOSSARY OF TERMS

AFS:	Annual Financial Statistics
ANOVA:	Analysis of variance
BER:	Bureau for Economic Research
CEE:	Central and Eastern Europe
COLLij	Collateral
CRIC:	Call Reports of Income and Condition
CRSP:	Centre for Research in Security Prices
CR:	Current Assets Ratio
DTI:	Department of Trade and Industry
EBTI:	Earnings before Tax and Interest
EFCs:	Entrepreneurship Framework Conditions
E-Views:	Econometric Views
GDP:	Gross Domestic Product
GEM:	Global Entrepreneurship Monitor
GLS:	Generalized Least Squares
GUARij	Personal Guarantees
IFC:	International Finance Corporation
ILDP:	International Leadership Development Programme
LBOs:	Leveraged Buyouts
LISREL:	Linear Structural Relations
LSDV:	Least Squares Dummy Variable
LTDR:	Long-Term Debt Ratio
MSMEs:	Micro, Small, and Medium-sized Enterprises
NSB Act:	National Small Business Amendment Acts
OECD:	Organisation for Economic Co-operation & Development
OLS	Ordinary Least Squares
QFS:	Quarterly Financial Survey
QLFS:	Quarterly Labour Force Survey
POT:	Pecking Order Theory
RATEij	Interest Rates
ROA:	Return on Assets

ROE:	Return on Equity
SIZE:	Firm Size
STDR:	Short-Term Debt Ratio
SIC:	Standard Industrial Classification of all Economic Activities
SMEs:	Small and Micro Enterprises
SMMEs:	Small, Medium, and Micro-sized Enterprises
StatsSA:	Statistics South Africa
SA:	South Africa
TANG:	Asset Tangibility
TOT:	Trade-off Theory
TSR:	Tokyo Shoko Research
TDR:	Total Debt Ratio

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CHAPTER ONE
INTRODUCTION

1.0 BACKGROUND

In South Africa, micro, small, and medium-sized enterprises (MSMEs) contributed 33% to GDP in 2010Q4, and their contribution increased to 42% by 2015Q1 based on the Quarterly Financial Survey (QFS) of Statistics South Africa (StatsSA). According to the 2014 Global Entrepreneurship Monitor (GEM) survey on Entrepreneurship Framework Conditions (EFCs) main indicators, South Africa exhibited the highest-rated amongst six African countries in Physical Infrastructure at 3.06 points, and in Finance and National Policy at 3.02 points each. South Africa was the lowest-rated on Primary and Secondary Education at 1.83 points, thereby exhibiting slower growth than its African counterparts. Rogerson's study (2004) observed that "in South Africa, small firms' contribution to employment creation is weak because most of them do not grow." The 2015 Global Entrepreneurship Monitor (GEM) survey stated that "South Africa has persistently low levels of entrepreneurial activity relative to other countries participating in GEM," and that "Sixty-two percent of businesses in 2015 closed for financial reasons, either because they were not profitable, or because they encountered problems in accessing financing to sustain the business." According to the Department of Trade and Industry (DTI) (2008), "most of the small firms go out of business within a short period of time." The report shows that only 1% of those small businesses registered between April 1, 2005 and March 31, 2006, survived for a period of from 1.5 to 2.5 years.

Traditionally, MSMEs have been operating differently to large enterprises globally in their financial decisions, ownership and management style, profitability level, and behaviour. This paper analyses the influence of financing structures on a range of performance indicators for MSMEs in South Africa for the purpose of finding ways to improve their profitability, and strengthen their contribution to the urgent need for employment creation in South Africa.

1.1 STATEMENT OF PROBLEM

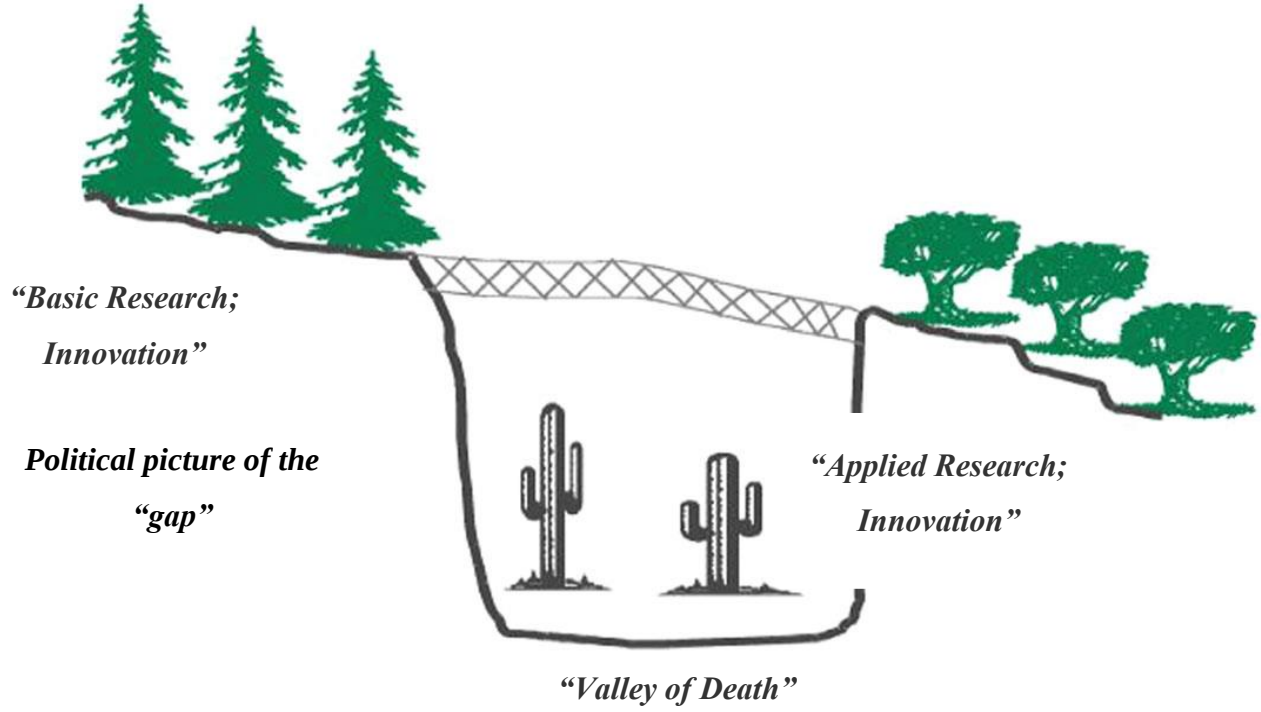
Previously, most studies on MSMEs have focused on MSMEs' access to the available types of finance. They have not isolated the importance of different structures of finance, nor accounted for important firm-level factors. Existing research on small size and performance

has not isolated the importance of different structures of finance in specifically the South African context. This study is similar to the studies undertaken by Memba (2011), which focused on "the impact of venture capital finance on performance of small and medium enterprises in Kenya." Abdulsaleh and Worthington (2013) reviewed literature on "the various financing sources of SMEs, taking into account the effects of both SME characteristics and those of the owner-managers on SME financial behaviour."

It is important to highlight other reasons as well that motivated me to focus this study on a South African context. In another a study by Fatoki and Odeyemi (2010) "it was reported that 75% of South African small firms fail." "Although many factors that hinder their growth are cited in the literature, lack of access to external finance is viewed as a serious constraint," as reported by the Organisation for Economic Co-operation and Development (OECD) (2009). This is consistent with the studies by Dauda and Nyarko (2014), who reported that "small firms are constrained by lack of access to finance." Makina et al (2015) also indicated that "in South Africa, financial constraints are one of the most daunting challenges for small firms." Fatoki and Odeyemi (2010) reported that "75% of small-firm loan applications are rejected." Furthermore, the studies by Chittenden et al (1996) reminded us that "as a result of lack of access to external finance, MSMEs heavily rely on internally generated funds that would not be sufficient to finance expansion and growth."

Figure 1 below portrays "The Valley of Death," a concept adopted from the studies of Ehlers (1998) and Wonglimpiyarat (2015) which this present study uses to describe the "gaps" that stunt growth in MSMEs. Gaps include knowledge of forms and types of industry, firm size, asset tangibility, and current assets in relation to current liabilities and profitability level.

Figure 1: "The Valley of Death"



Source: Adopted from Ehlers (1998) and Wonglimpiyarat (2015)

To avoid "The Valley of Death," methods using the two major types of economic indicators: (1) demographic and geographic, and (2) financial, should be devised to examine how financing structure and range of performance influence MSMEs in South Africa. The need is urgent, as Table 1 below shows. It is the summary report from the 2015 Global Entrepreneurship Monitor (GEM) survey. Its comparison of entrepreneurial activity in GEM economies in the years from 2001 to 2015 indicated that, when compared to five other African countries, South Africa had the highest level of fear of failure in entrepreneurship, with a measurement of 30.3%. The fear factor could have been influenced by intrinsic personality traits as well as by societal and regulatory factors, as highlighted in the GEM (2015) report.

The South African measurement of respondents who perceived good opportunities to start a business was lowest with 40.9%, compared to an average of 54.8% in the other African countries in that GEM Report. However, this is likely to grow. Chronically high unemployment and low economic growth in South Africa will force its people into entrepreneurship in the absence of enough other alternatives for sustainable livelihoods.

South Africans' perceived capabilities level of 45.4%, slightly above Egypt's 41.5%, is still below the average of 54.8% for the African region. This could be the reason for a lack

of confidence in their ability to start a business, low levels of development in certain areas, and a very low 4.8% level of business discontinuance. South Africa's entrepreneurial activity is effectively going backwards. Further studies could be done to determine whether the ability and level of development exist before the business establishment. Another study could also be done that focuses on the determinants for numbers of entrepreneurial activity that those early-stage businesses were engaged in during the same period.

Exiting a business could be for a positive reason, such as having an opportunity to sell it, or to pursue another opportunity, or to enjoy a planned retirement. Negatively, discontinuation of a business could be due to a lack of business profitability due to the entrepreneur's inadequate business-related skills; or, that the business has run out of working capital. Many entrepreneurs in South Africa are active in over-traded sectors populated by low-profit-margin businesses. The high level of competition for a limited market includes the reasons of affordability and inefficiencies that may exist and/or be planned for towards the support structures for MSMEs.

Only 10.1% of South African respondents in the GEM Report intended to start a business within three years, which is far fewer than the average of 42.5% people with entrepreneurial intentions. Reasons for lag in a growth of South African entrepreneurship could be a lack of good opportunities for starting a business, or that the environment is not sufficiently enabling and supportive, or that aspiring entrepreneurs do not perceive that they have the necessary skills, knowledge and expertise to start a business.

Table 1: Comparison of entrepreneurial activity in the GEM economies in 2001-2015 by geographic region (% of population aged 18-64)

Region and economies Africa	*Botswana*	*Burkina Faso*	*Cameroon*	*Egypt*	*Senegal*	*South Africa*	*Average (weighted)*
Measures of entrepreneurship							
Discontinuation of businesses	14.7	8.1	9.0	6.6	13.3	4.8	9.4
Fear of failure*	18.9	17.9	23.9	29.5	15.9	30.3	22.7
Perceived capabilities	74.1	78.0	73.1	41.5	89.0	45.4	66.9
Entrepreneurial intentions **	61.9	45.9	33.1	36.8	66.6	10.9	42.5
Perceived opportunities	57.8	58.1	60.7	41.6	69.9	40.9	54.8
Total (weighted)	**45.48**	**41.6**	**39.96**	**31.2**	**50.9**	**26.46**	**39.3**

Source: GEM Report (2015). ***"****Denotes respondents in the 18-64 age group who perceive good opportunities to start a business" and "*** denotes respondents in the 18-64 age group who are currently not involved in entrepreneurial activity and expect to start a business within three years."*

1.2 RESEARCH QUESTIONS

i. Which financing structures are accessed by MSMEs in South Africa?
ii. How does the financing structure influence the performance of MSMEs in South Africa?

1.3 OBJECTIVE OF STUDY

The main objective of this study is to examine the influence of financing structures on performance of MSMEs in South Africa. The examination includes:

i. The financing structure of MSMEs in South Africa
ii. The influence of financing structures on performance of the MSMEs in South Africa

1.4 JUSTIFICATION OF STUDY

The purpose of this paper is to analyse the influence on the dependent variable by the independent variable(s). According to the studies by Creswell (1994), "the quantitative method enables studies to explain phenomena by collecting numerical data and findings from statistical methods and other quantification procedures". Quantitative methods are deductive. The hypotheses are shaped by the data and information, which can be checked empirically, and they might be accepted or rejected.

This study aimed to develop a hypothesis and a theoretical framework which can only be examined by using quantitative measures. Statistics were analysed to identify where most MSMEs operated, and changes in their operation, in the years 2013, 2014, and 2015 respectively. The quantitative research method used was found to be an appropriate method for this study.

Another reason for selecting this method was that numerous literatures on relevant studies have employed the quantitative methods to explore their research problems and test their hypotheses.

We used two major types of economic indicators to describe the characteristics on MSMEs and examine the influence of financing structures on performance of MSMEs in South Africa. The indicators were (1) demographic and geographic, and (2) financial.

The variables I selected in this study are similar to the approach used in the studies of Michaelas et al. (1999) and Hall et al. (2004). However, the independent and explanatory variables used in this study included, firstly, the demographic and geographic indicators to determine the forms and type according to the industry sector in which the MSMEs operate.

Secondly, We used the financial indicators to compare the firms' debt level, size of the firms' total assets, asset tangibility and the firms' current assets to its current liabilities.

The study used the financing structure of profitability level as the dependent variable. It included the return on assets, based on the firm's contribution to the Gross Domestic Product (GDP,) according to the economic sector for the MSMEs in South Africa. These independent and control variables are accepted by the relevant literatures as the appropriate indicators for the MSMEs' performance measurement. However, because MSMEs are entities and not persons, indicators of age, ownership, tax, gender, and level of education -- among others -- would not be appropriate in this study, and therefore they were excluded from independent variables.

Previous studies suggested that most MSMEs rely heavily on internally generated funds, rather than the use of equity and debt financing, because their applications for sources of finance are usually rejected. That is why this study aims to find answers to the three research questions stated earlier:

i. Which financing structures are accessed by MSMEs in South Africa?
ii. How does the financing structure influence the performance of MSMEs in South Africa?

1.5 ORGANISATION OF THE STUDY

Chapter One includes the background of the study, the statement of the problem, research questions and objectives, justification of the study, and research assumptions.

Chapter Two reviews literature and theories related to the influence of financing structure on performance of MSMEs in South Africa.

Chapter Three details the research methodology used to conduct the study. It is organised into research approach and strategy, data collection, frequency and choice of data, data analysis methods, research reliability and validity.

Chapter Four discusses the research findings. Chapter Five provides a summary, conclusions, recommendations, limitations, and improvement.

CHAPTER TWO
LITERATURE REVIEW

2.0 INTRODUCTION

This chapter explores theoretical and empirical underpinning with the objective of finding what other scholars have researched on or written regarding influence of financing structure on performance of MSMEs. Also this chapter develops a conceptual framework in Figure 2 below, which forms the basis of comparison of data analysis and models. The chapter is structured as follows: conceptual framework, theoretical background, MSMEs defined overview of MSMEs, performance of MSMEs, performance measurement, performance models, theory and practice of financing structures for MSMEs, financing structure defined, the history of financing structure, the influence of financing structure on performance of MSMEs, and other sources of finances attracted MSMEs by using financing structures and empirical review.

2.1 MSMEs DEFINED

According to the DTI (2008), "in South Africa (SA) a 'small business' is officially defined in Section 1 of the National Small Business Act of 1996" as amended by the National Small Business Amendment Acts of 2003 and 2004 (NSB Act) as: " a separate and distinct business entity, including co-operative enterprises and nongovernmental organisations, managed by one owner or more which, including its branches or subsidiaries, if any, is predominantly carried on in any sector or sub sector of the economy mentioned in Column I of the Schedule14".

The International Finance Corporation (IFC) (2009), highlights that "the issue of what constitutes a small or medium enterprise is a major concern in SA". Many authors have given different definitions of this category of business. According to the National Small Business Act 1996 of South Africa, "A common definition of SMEs includes registered businesses with less than 250 employees".

A "turnover band" is a group/bracket/grade of the level of turnover. In general, MSMEs are defined in many different ways, which in practise are referred to as either to the turnover bands or to number of employees and/or a combination of both, that allows for variations according to industry sector. According to the International Leadership Development Programme (ILDP) (2014) report (p.8-9), "the definition of SMEs by size is

necessary, but it is not sufficient for an understanding of a sector where the realities are not only complex, but also dynamic". The ILDP (2014) report highlights that the abbreviation 'SME', meaning 'Small to Medium Enterprise', "occurs commonly in the European Union (EU) and in international organisations such as the World Bank (WB), the United Nations (UN) and the World Trade Organisation (WTO)". The term "small and medium businesses (SMBs)" is largely used in the United State of America. Meanwhile in South Africa the term 'SMME' refers to "small, medium and micro-enterprises". Elsewhere in Africa, MSME refers to "micro, small and medium enterprises".

According to the National Small Business Act (NSB Act 1996), the terms "SMME" and "SME" are used interchangeably in SA. "The SME definition uses the number of employees (the most common mode of definition) per enterprise size category combined with the annual turnover categories, and the gross assets excluding fixed property". Table 2 below is a summary from various authors of how MSMEs have been defined in seven different regions. Table 3 below is a summary of the size of MSMEs across eleven categories of industry, as reported by DTI (2003).

The NSB Act defines the SMMEs in South Africa further as follows:

Small enterprise: "The upper limit is 50 employees. Small enterprises are generally more established than very small enterprises and exhibit more complex business practices".

Medium enterprise: "The maximum number of employees is 100 or 200 for the mining, electricity, manufacturing and construction sectors". "These enterprises are often characterised by the decentralisation of power to an additional management layer".

Micro-enterprise: "The turnover is less than the value added tax (VAT) registration limit, that is, R150,000 per year". "These enterprises usually lack formality in terms of registration". "They include, for example, spaza shops, minibus taxis, and household industries. They employ no more than 5 people".

Table 2: Summary of Definitions of MSMEs in Different Regions

	EU	USA	EGYPT	GHANA	INDIA	CHINA	SA
	SMEs	SMBs	MSMEs	MSMEs	MSMEs	SMEs	SMMEs
Number of employees							
Micro	< 10	0	1 to 4	up to 5	0	0	< 20
Small	< 50	<100	5 to 14	6 to 29	0	<300	50-99
Medium	< 250	<500	15 >	30 >	0	300 >	100-200
TURNOVER							
Micro	$3m	0	0	$10 k	<Rs50	0	<R150k
Small	$13m	0	0	$100k	Rs50-	<Y30	R2m to R4.5m
Medium	$67m	0	0	$1m	Rs60-	Y30 >	R4.5 to R50m

Source: Author's compilation from various sources

Table 3: Summary of Sizes of MSMEs across Various Industrial Sectors

Industrial Sector	**Classification of small, medium and large enterprises based on turnover**		
	Small	**Medium**	**Large**
Forestry and fishing	≤ R13,5 million	> R13,5 million; ≤ R22,5 million	> R22,5 million
Mining and quarrying	≤ R45,0 million	> R45,0 million; ≤ R175,5 million	> R175,5 million
Manufacturing	≤ R58,5 million	> R58,5 million; ≤ R229,5 million	> R229,5 million
Electricity, gas and water supply	≤ R58,5 million	> R58,5 million; ≤ R229,5 million	> R229,5 million
Construction	≤ R27,0 million	> R27,0 million; ≤ R117,0 million	>R117,0 million
Wholesale trade *	≤ R144,0 million	> R144,0 million; ≤ R288,0 million	> R288,0 million
Retail and motor trade*	≤ R85,5 million	> R85,5 million; ≤ R175,5 million	> R175,5 million
Accommodation and catering*	≤ R27,0 million	> R27,0 million; ≤ R58,5 million	> R58,5 million
Transport, storage and communication	≤ R58,5 million	> R58,5 million; ≤ R117,0 million	> R117,0 million
Activities auxiliary to financial intermediation, real estate and other business services (excluding financial intermediation, insurance, pension funding and business services not elsewhere classified)	≤ R58,5 million	> R58,5 million; ≤ R117,0 million	> R117,0 million
Community, social and personal services (excluding government and educational institutions)	≤ R27,0 million	> R27,0 million ≤ R58,5 million	> R58,5 million

Source: National Small Business Amendment Bill - DTI (2003)
(Adjusted by StatsSA and Trade Industry DTI cut-off points)

2.2 OVERVIEW OF MSMEs IN SOUTH AFRICA

This section provides a general overview of financial decisions and behaviour of MSMEs across all the provinces in South Africa. Its objective is to understand what influences the performance and growth of MSMEs. We first study the distribution of MSMEs across the nine provinces of South Africa, with the objective of ascertaining where most MSMEs operate, and changes in the distribution between 2008 (Q1) and 2015 (Q2). Table 4 is a summary of geographic data derived from the Quarterly Labour Force Survey (QLFS) published by Statistics South Africa (StatsSA). In 2008 StatsSA changed the QLFS survey methodology. To avoid complications that could arise from the structural break in non-financial data by the end of 2007, comparisons over time will not use 2007 proxy (information or data) according to the DTI.

Table 4: MSMEs by Province within the South African Economy

MSMEs	Number (2008Q1)				Number (2015Q2)			
	Total	Formal	Informal	Other	Total	Formal	Informal	Other
Western Cape	223 933	114 976	95 212	13 745	230 324	110 107	110 188	10 030
Eastern Cape	218 865	56 579	154 631	7 655	197 366	50 670	141 739	4 957
Northern Cape	29 894	11 450	11 768	6 676	20 611	8 534	9 058	3 019
Free State	114 949	31 040	76 127	7 783	96 846	26 224	60 816	9 806
KwaZulu-Natal	418 406	102 591	289 347	26 468	373 434	74 976	283 165	15 293
North West	109 860	25 817	76 855	7 188	112 856	27 430	79 153	6 273
Gauteng	687 556	270 093	405 180	12 283	785 321	306 231	465 100	13 989
Mpumalanga	193 259	29 760	156 814	6 685	185 399	35 208	141 129	9 063
Limpopo	186 101	24 193	155 001	6 907	249 663	28 054	207 512	14 098
Total	**2 182 823**	**666 501**	**1 420 933**	**95 389**	**2 251 821**	**667 433**	**1 497 860**	**86 528**

Source: StatsSA (Quarter 2:2015)

The numbers in Table 4 cover a very broad range of firms in the size categories of MSMEs. According to the DTI (2008), they include formally registered, informal, and non-VAT-registered organisations. Interesting changes can be seen. “Between the period from 2008 (Q1) to 2015 (Q2), the number of MSMEs in South Africa increased by 3% from 2.18 million in 2008(Q1) to 2.25 million in 2015(Q2)”. However, according to the StatsSA (2016) and Bureau for Economic Research (BER) (2016), “This growth is significantly less than the 14% expansion in GDP over the same period”. Among the nine provinces, “Limpopo had the highest growth rate in its number of MSMEs (34%), followed by Gauteng (14%). The Northern Cape lost the largest portion (31%), followed by the Free State (16%)”.

There are far fewer formal MSMEs than informal ones in South Africa. Only in the "Western Cape and Northern Cape are the numbers virtually equal". "Rural provinces tend to have more informal SMMEs, due to their high number of hawkers and informal traders". "Nearly half of South Africa's formal MSMEs operate in Gauteng (46%), followed by the Western Cape (16%). Gauteng also has the most informal MSMEs (31%), followed by KwaZulu-Natal (19%)". "The correlation between the numbers of formal MSMEs per province in comparison to South Africa's gross domestic product (GDP) is at 98%, while that of informal MSMEs is at 92% when compared to the country's gross domestic product".

Table 5 below summarises the distribution of MSMEs across various industrial sectors. The intention is to see in which sectors most of the MSMEs ran, and if there were any changes in the period from 2008 (Q1) to 2015 (Q2).

Table 5: MSMEs by Industrial Sectors

MSMEs	Number (2008Q1)	Number (2015Q2)				Turnover (2015Q2)	GDP (2015Q2)	Turnover* /MSME
	Total	Total	Formal	Informal	Other	R million	R million	R million
Total	**2 182 823**	**2 251 821**	**667 433**	**1 497 860**	**86 528**	**2 908 020**	**815 636**	**1.29**
Agriculture	87 820	56 774	0	0	56 774	na	35 213	na
Mining	2 696	2 199	0	2 199	0	35 256	69 421	16.03
Manufacturing	267 817	201 459	62 657	138 801	0	658 740	111 672	3.27
Electricity, gas & water	4 252	7 456	6 656	801	0	7 488	38 647	1.00
Construction	252 233	299 242	77 098	222 143	0	229 016	38 804	0.77
Trade & Accommodation	974 083	944 467	186 798	757 669	0	1 160 560	129 144	1.23
Transport & Communication	122 370	133 134	56 620	76 514	0	134 152	87 612	1.01
Finance & Bus. Services	236 740	271 712	172 423	99 289	0	571 384	183 430	2.10
Community	227 243	305 624	105 181	200 444	0	111 424	50 982	0.36
Other	7 569	29 754	0	0	29 754	0	70 711	0.00

*Sources: StatsSA (Quarter 2: 2015); *Annualised*

As indicated by StatsSA (2015) in Table 5, "of the 2.2 million MSMEs in South Africa, most (944.5 thousand) operate in the domestic Trade (wholesale and retail) and Accommodation sector of the economy, followed by the Community, Social, and Personal Services sector". However, "the turnover of MSMEs in the various sectors differs largely. On the high side, MSMEs in the Mining sector had an average turnover of R16 million (annualised) in the first quarter of 2015, compared to only R360 000 in the Community, Social, and Personal Services sector". StatsSA (2015) reported that only 85% turnover of the total number of MSMEs per industry is more correlated than the 39% turnover of the gross domestic product in South Africa. However, "only when we consider formal MSMEs, the correlation with gross domestic product increases to 78%, while informal SMMEs drop to

28%". "The implication is that informal SMMEs do not operate in economic sectors because of their size, but rather due to other reasons such as initial layout costs and ease of entry".

2.3 THEORETICAL REVIEW OF CAPITAL STRUCTURE

According to Modigliani and Miller (1958) and Hashemi, R. (2013), the capital structure is defined as "the combination of both debt and equity that an MSME uses for funding its operations". The capital structure decision can be very complex. Poor capital structure decisions by an MSME can result in an increase in the cost of its capital and a decrease in its profitability. Interestingly, Modigliani and Miller (1958) argue that "the choice of capital structure does not affect a firm's market value". Hashemi, R. (2013) explains, "It is the assets of a firm that determine the value of the firm and not the way by which these assets are financed. The initial perfect-market assumptions, on which the 1958 theory of Modigliani and Miller was based, were later reviewed in 1963 with the introduction of the tax benefits of debt". "Because the interest on debt is tax deductible, thereby creating tax savings for the borrower, it becomes possible for firms to minimize their costs of capital and maximize shareholders' wealth by using debt" as per studies of Modigliani and Miller (1963).

This study now looks at four theories of capital structure from various researchers: Pecking Order; Trade-off; Market Timing; and Agency Cost.

2.3.1 Pecking Order Theory

Myers and Majluf (1984) in the Pecking Order Theory argue that "there is no well-defined optimal capital structure for a firm". "Management has a preference to choose internal financing before external financing". "When a firm is forced to use external financing sources, managers select the least risky and demanding source first". "When it is necessary to issue external sources, debt issuance is preferred to new equity". The Myers and Majluf (1984) model indicated that "management will normally follow 'a pecking order' by using the internal funds at first, and thereafter the least risky debt. Using the equity becomes their last resort". "In the absence of investment opportunities, firms retain profits and build up financial slack to avoid having to raise external finance in the future," Myers and Majluf (1984).

The studies of Holmes and Kent (1991) found that managers always like to have the power and control over MSMEs. “That’s the reason managers usually don’t accept new shareholders, and try to finance their projects with internal funds available”. Whereby, the managers would still fund those MSMEs’ activities without putting any control restrictions measures if the MSMEs do not have adequate internal funds. The studies of Huang and Ritter (2009) support the prediction of ‘pecking order’ management of financing: MSMEs will always choose the use of external equity as the last option. Short-term finance becomes the optimal solution as it requires no collateral, nor it follows by long-term debt.

2.3.2 Trade-off Theory

A proposition theorem by Modigliani and Miller (1958) is that “the trade-off theory determines an optimal capital structure when an irrelevance theorem is added, which includes taxes, costs of financial distress, and agency costs, but retains the assumptions of market efficiency and symmetric information”. The irrelevance theorem may lead to an optimal trade-off of capital structure, since the MSMEs acquire the costs of equity and debt against its benefits as follows. “Higher taxes on dividends indicate more debt”, Modigliani and Miller (1963). “Higher costs of financial distress indicate more equity and less bankruptcy; senior debt can force managers to forgo profitable investment opportunities”, Myers (1977). “Too much equity can lead to free cash flow and conflicts of interest between managers and shareholders” as per studies of Jensen (1986). Ultimately, MSMEs with significant growth and opportunities for investment may lose optimally when overhanging debt stops the raising of new capital, or when negotiating for new investment opportunities that may lead to an inefficient bankruptcy.

2.3.3 Market Timing Theory

Baker and Wurgler (2002) explain that “market timing has great importance in identifying a firm’s performance during organising the proper financial structure”. The MSMEs that have limited and/or inadequate requirements towards the environment which has a very discouraging financial market, with stringent control and restrictions, would be forced to look elsewhere for another market and/or environment with less risky debt. According to the studies of Baker and Wurgler (2002), “critique relating past market-to-book

ratios to capital structure, the pecking order, and static trade-off theories are ever more challenged by the market timing theory". A survey by Graham and Harvey (2001) found that "two-thirds of business executives seem to base their financing decisions on market timing because the quantity through which our stock is overvalued or undervalued was an essential or very essential concern in the decisions of equity issue".

According to Baker and Wurgler (2002), "most of the evidences support market timing theory in a sense that managers wait for the market conditions to get better, or that their stock's position in the market gets better. Before issuing new stocks, firms try to make their performance better".

2.3.4 Agency Cost Theory

For decades, dedicated researchers have tried to build models in which capital structure is determined by agency costs. Such costs arise from conflicts of interest between the principal and the agent, when the agent's interest and preference dominate those of the principal. Jensen (1986) explains the agency cost as "concerned with the diverging interest when the firm ownership and management are separated". Building on the work of previous researchers, Jensen and Meckling (1976) and Harris and Raviv (1991) "identified two types of agency cost that can arise from conflict between shareholders and managers".

One type of conflict arises "because managers hold less than 100% of the residual claim." Hashemi, R. (2013) (p.300), therefore it means that they cannot capture the entire gain from their value-maximizing activities.

The studies of Titman and Wessels (1988); Michaelas et al., (1999), also highlighted the fact that "the second type of conflict arises between debt holders and equity holders because debt contracts give equity holders an incentive to invest sub-optimally". The studies of Stiglitz and Weiss (1981) have pointed out that "agency problems such as asymmetric information and moral hazards can impact on the availability of credit and hence the capital structure of new SMEs".

2.4 EMPIRICAL REVIEW OF FINANCING STRUCTURE ON PERFORMANCE OF MSMES

The Table in Appendix A is a summary of empirical studies that examined the influence of the financing structure on the profitability of an MSME.

2.4.1 Equity Financing

Ou and Haynes (2006) conducted studies "to investigate the acquisition of additional equity capital by small firms" in the United States. They collected a total sample of 8,100 firms which covered the period 1993-1998 from the Federal Reserve Board. They used logistic regression models and multivariate analyses "to assess and to distinguish small businesses by their use of internal and external equity capital". The results found that "younger, lower quality firms were more likely to acquire additional internal equity capital than other firms". There appeared to be "a pecking order of borrowing from internal sources to traditional lenders to non-traditional lenders". Schäfer, Werwatz and Zimmermann (2004) have also conducted studies on "determinants of financing mode chosen by young innovative SMEs in Germany, using the sample dataset of 228 firms with an annual turnover up to €125 million based on investments promoted by the Kreditanstalt für Wiederaufbau (KFW) group" covering the period from 1999 to mid-2003. Series of Logit models were used, and the results found that "risky SMEs, particularly those with a low price cost margin and a low ratio of equity to assets have a significantly higher chance of receiving equity finance".

2.4.2 Debt Financing

Abor (2007b) pioneered empirical studies that analysed "the effect of debt policy on the performance of small and medium-sized enterprises (SMEs) in Ghana and South Africa", covering the period 19981-2003. The sample data "for 160 Ghanaian SMEs sourced from the National Board of Small Scale Industries and the Association of Ghana Industries, and 200 South African SMEs derived from the register of the Small Business Advisory Bureau database". "This study applied a Generalized Least Squares (GLS) panel model". The results found that "capital structure, especially long-term and total debt ratios, negatively affects performance of SMEs". It suggested that agency costs contributed "to high debt policy, thus resulting in lower performance of SMEs" for both countries. Significant and negative relationships were found "between total debt to capital ratio and gross profit margin" for both countries. A significant and negative relationship in both countries was found "between trade credit and gross profit margin".

Titman and Wessels (1988) conducted studies "to analyse the determinants of capital structure choice covering the period 1974-1982". A sample data of 469 firms was sourced

from “the Annual Compustat Industrial Files and the quit rates data was derived from the U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings publication”. “The correlation matrix of the sample data and the measurement and structural model were estimated using the application of the Linear Structural Relations (LISREL) system”. The results found a “positive relationship between size and the total market value of the firm”. Because the “firms with high market values relative to their book values have higher borrowing capacities and hence have higher debt levels relative to their book values”. “Short-term debt ratios were shown to be negatively related to firm size, possibly reflecting the relatively high transaction costs small firms face when issuing long-term financial instruments”.

Hadlock and James (2002) explored empirical studies that “investigated whether adverse selection considerations play a role in determining a firm's decision to use bank debt” covering the period 1980-1993. A sample data of 500 firms derived from “the Compustat and the Centre for Research in Security Prices (CRSP) files (NYSE/AMEX and NASDAQ), and the logistic regression model were applied to test the main hypothesis” in this study. The results found positive significant evidence “consistent with the main hypothesis, and concluded that companies prefer debt financing because they anticipate higher returns”.

Michaelas et al. (1999), conducted studies by investigating “the financial policy and capital structure choice of small and medium sized enterprises (SMEs) in the U.K, for all but the first time period in 1988, as well as for all but the first industry”. The regression equations were estimated using the Econometric Views (E-Views) statistical package. Least Squares Dummy Variable (LSDV) models were applied to test the formulated hypotheses by “including the eleven explanatory variables based on the fixed-effects assumption”. The results found a “positive correlation exists between level of debt and future growth and that the time- and industry-specific effects influence the maturity structure of debt raised by SMEs”. On the other hand, the results found that “on average, long-term debt ratios exhibit a positive relationship with changes in economic growth”.

Ono and Uesugi (2009), conducted studies on the “determinants of the use of collateral and personal guarantees in Japan’s SME loan market” during the period 2002, using sample data derived from “the Financial Information Database of Tokyo Shoko Research (TSR)”. The sample size of 1702 firms with collateral and personal guarantees that may affect borrower-lender relationships were tested, using the probit regression model for collateral and exogeneity test for guarantees. The results found that “there is a positive

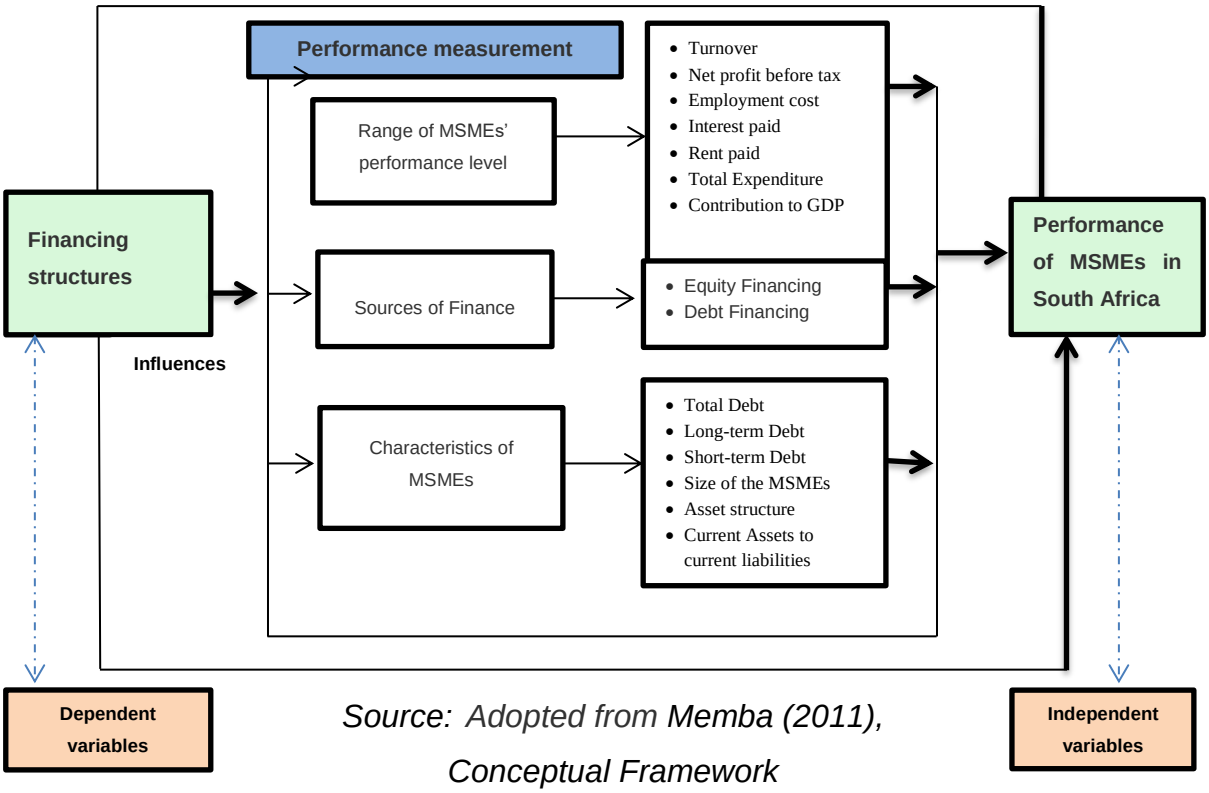
relationship between the use of collateral, and the strength of the borrower-lender lending relationship results in easier SME access to external sources of finance".

Abor (2008) conducted studies "on determinants of the capital structure decisions of Ghanaian firms among the three sample categories": 22 of quoted firms, 55 of large unquoted firms and 153 of SMEs, using a panel regression analysis model by assembling of observations on cross-section units covering the six year period 1998-2003. The results on assets structure were found to be mixed. This indicated that "there is a positive relationship between asset structure and long-term debt ratio among quoted and unquoted firms, but negative associations with short-term debt ratio among all the sample categories". The results also indicated that "both long-term and short-term debt ratios appear to have inverse associations with profitability in all the sample categories, which supports the pecking order hypothesis, in that profitable firm initially rely on less costly internally-generated funds and subsequently look for external resources if additional funds are needed".

Mesquita and Lara (2003) conducted empirical studies that "examined the relationship between debt and profitability that exists covering the period that included the fiscal years 1995-2001". A sample data used in this study was sourced from "the financial statements of 70 companies in Brazil, and the Ordinary Least Squares (OLS) method" was used to analyse the hypothesis. The results found "a positive relationship between rates of return and debt for short-term financing and equity, but found a negative relationship for long-term financing".

In summary conclusion, the empirical reviews have given variation results concerning the effect of financing structure on MSMEs' profitability. They contribute to further study of the issues by exploring the influence of financing structure on performance of MSMEs in South Africa.

Figure 2: Conceptual Framework



Source: Adopted from Memba (2011), Conceptual Framework

2.4.3 Profitability

An important contribution to the related empirical literature was from Baker (1973), who "investigated the effect of financial leverage, or relatively greater use of debt capital, on industry profitability in the US". The study applied the Sherman and Tollison (1971) data reported during the period 1971 for 25 of H. Michael Mann's industries, Mann (1966). The two-stage least squares model was used in this study. The results found a "positive effect of leverage similar to those in previous studies that have found a strong leverage effect but with the wrong sign". It suggested that since financial "leverage is correlated with some of the elements of market structure, particularly cost fixity, it is desirable to include leverage in equations explaining profitability".

The pioneering studies of Degryse et al. (2012) on "the impact of firm and industry characteristics on small firms' capital structure", employed a proprietary panel dataset of 100,000 firms derived from eight different industries of the Dutch small and medium-sized enterprises (SMEs) covering the period 2003-2005. Econometric methodology models of correlation matrix and regression equation were used in this study. The results found that the "SMEs use profits to reduce their debt level, since they prefer internal funds over external funds". However, "if a firm is growing, it increases its debt position because it needs more funds, and their results show that this happens according to the pecking-order theory" as reported by Myers and Majluf (1984).

Gleason et al. (2000) conducted studies that examined "the interrelationship between culture, capital structure, and performance on retailers during the period 1994". A sample data for 198 European Community retailers was sourced from the 1995 Disclosure/Worldscope database. The researchers used the regression equation estimates model and explored the hypotheses into four cultural clusters, since the retailer's capital structures and influences varied in each country. Their results found "conclusive evidence that capital structures vary by the cultural classification of European retailers" and have no influences on a firm's profitability.

Hashemi (2013) conducted studies that "investigated the borrowing behaviour of the SMEs comprehensively. The observed SMEs were picked up from different manufacturing industries in Iran". A sample data collected from "201 SMEs in Iran over the period of 2006 -2010. The statistic panel data regression was used to analyse the empirical data". The result found that "profitability has a strong impact on SMEs' borrowing decisions". It suggested that, "beside profitability, size and asset structure appear to have an impact on leverage level in comparison with other determinants".

The empirical literature from Kolari and Hwan Shin (2004) describes how they conducted tests on small business loans defined as "less than $250,000" in the U.S banking industry, covering the period 1994-2001. They "assessed the profitability and riskiness of small business lenders". A sample data was collected from "Call Reports of Income and Condition (CRIC)" for individual banks. The researchers applied two alternatives: the specialisation hypothesis and the diversification hypothesis. They used the multivariate panel regression to test effects of small business lending to banks' return on assets (ROA). They tested "the effects of small business lending on banks' rate of return on equity (ROE) and associated failure risk and the efficient frontier". The results found that "small business has

positive effects on banks' rate of ROA, after taking into account bank risk". "Small business lending was associated with higher ROEs per unit risk due to lowering of bank failure risk".

Roden and Lewellen (1995) composed empirical studies that investigated a sample of large transactions used in the leveraged buyouts financing packages used to test an hypothesis established in "previous literature on the determinants of corporate capital structure decisions". A final sample data of 107 leveraged buyout transactions (LBOs) in the United States were sourced from COMPUSTAT or Moody's, and covered the period 1981-1990. The researchers applied multinomial Logit Model Estimates. Their results found "a significantly positive relation between profitability and total debt as a percentage of the total buyout-financing package".

Petersen and Rajan (1994) conducted empirical research covering the period 1988-1989 in the US to investigate "how ties between a firm and its creditors affect the availability and cost of funds to the firm". A sample data analysed for 3,404 firms was derived from "the survey of small firms by the National Survey of Small Business Finances, and the two-sided tobit regression model were applied". The results found that "small firms borrow a significant fraction of their debt from lenders who provide them informationally intensive financial services". It suggested that the availability of financing from institutions has strong effects on firms to stay longer in relationships, while "it increases ties to a lender by expanding the number of financial services it buys from it, and so it concentrates its borrowing with the lender".

Taub (1975) established the empirical study to "ascertain those factors that influence the firm's choice of a debt-equity ratio" covering the period 1960-1969. A sample data of 89 firms in the United States were randomly chosen from "the Compustat Industrial tapes supplied by the Standard and Poor Corporation, and a likelihood-ratio statistical model was applied to test the hypothesis". As expected, the results found that "the difference between the return to the firm, and the long term rate of interest and the size of the firm, had a positive influence on the firm's debt- equity ratio".

Studies by Mateev et al. (2013) tested "how firm characteristics affect SMEs' capital structure using a sample dataset of micro, small, and medium-sized firms (SMEs) in Central and Eastern Europe (CEE)". The sample of SMEs was drawn from the comprehensive Amadeus database of financial information on companies across Europe. A panel data analysis and correlation matrix of model variables for 3,175 SMEs from seven CEE countries covering the period 2001-2005 were used. The results found that "the cash flow coefficient

remains negative and statistically significant only for medium-sized firms". "This suggested that larger firms with sufficient internal funds use less external funding than comparable smaller firms".

Abor (2005) conducted studies on "the effect of capital structure on the corporate profitability of listed firms in Ghana", covering the period 1998- 2002. The panel regression model was applied "for estimation of functions relating the return on equity (ROE) with measures of capital structure". The results found "a significantly positive relation between the short-term debt ratio and profitability. A negative relationship between long-term debt ratio and profitability" was also found. Furthermore, the results found a "significantly positive association between total debt ratio and profitability".

Ramalho and Da Silva (2009), conducted studies using a "two-part fractional regression model for leverage decisions and capital structure on Portuguese SME firms, and grouped them into different size structures: micro, small, medium, and large". The data used in this study was drawn from the "Banco de Portugal Central Balance Sheet Data Office (CBSDO) database". A final sample of 4,692 Portuguese firms for the year 1999 was then selected. The results found "differences in terms of magnitude, direction and significance of some regression coefficients of the different capital structure determinants". The effects on leverage for profitability and liquidity were both negative, and a positive on growth variable. This suggested "that the pecking-order theory may be more suitable to describe the capital structure choices made by all size-based groups of firms".

Studies by Sogorb-Mira (2005) tested "how firm characteristics affect small and medium enterprise (SME) capital structure", using a panel data of 6,482 non-financial Spanish SMEs covering the period 1994-1998. Econometric methodology models of correlation matrix and regression equation were applied to model "the leverage ratio as a function of firm-specific attributes hypothesized by capital structure theory". The results found that "non-debt tax shields and profitability are both negatively related to SME leverage, while size, growth options, and asset structure influence positively SME capital structure. They also confirm a maturity matching behaviour in this firm group, as they try to finance their fixed assets with long term debt, and their current assets with short term debt".

Yegon et al. (2014) conducted empirical studies that "investigated the relationship between capital structure and the firm's profitability of banking industry in Kenya", covering the period 2004-2012. A sample data was derived from "the financial statements of the companies listed on the Nairobi Stock Exchange using the linear regression model". The

results found that “a significantly positive relationship exists between the short-term debt and profitability, and a statistically significant negative relationship between long-term debt and profitability”.

2.5 Conclusion

The empirical literature or evidence has shown that studies on the effect of financing structure on the profitability of an MSME have been done in the developed counties and a few other developing countries, with the findings mostly in support of a positive influence of financing structure on performance of MSMEs. However, the literature on the influence of financing structure on MSMEs performance appears non-existent. This study adopts the “The Valley of Death,” a concept adopted of Ehlers (1998) and Wonglimpiyarat (2015) that include knowledge of forms and types of industry, firm size, asset tangibility, and current assets in relation to current liabilities and profitability level to provide further insight from South Africa.

CHAPTER THREE
METHODOLOGY

3.0 INTRODUCTION

The purpose of this chapter is to explore the methodology for data collection instruments and panel data analysis. It consists of research design, sampling frame and techniques, data collection instruments and procedures, panel data analysis, and performing the empirical model.

3.1 RESEARCH DESIGN

According to Gall et al (2003) and Memba (2011), a "research design is a plan for collecting and utilizing data so that desired information can be obtained with sufficient precision, or so that a hypothesis can be tested properly". "It is a framework that guides the collection and analysis of data".

O'Farell and Hitchens (1988) and Schmitt-Degenhardt et al (2002) "have identified a four-field matrix of explanatory approaches to classify available business growth theories". This study adopted a similar method to that of Schmitt-Degenhardt et al (2002). It "distinguished on the one hand *static* from *dynamic* concepts, and on the other hand approaches that search for *internal* from those that identify *external* reasons for access to finance from financing structures and influences on performance of MSMEs in South Africa".

3.2 DATA COLLECTION INSTRUMENTS AND PROCEDURES

In order to perform the empirical analysis for this study, I used a sample data of 776 firms for South African MSMEs across all industrial sectors that are in accordance with the "Standard Industrial Classification of all Economic Activities (SIC)". Data was collected from the annual statistical release P0021 reports: Annual Financial Statistics (AFS) covering the three-year period of 2013, 2014, and 2015. The total of these samples consisted of 228 aggregated industrial data consisting of 13,151[1] firms for the year 2013; 290 aggregated industrial data consisting of 12,922[2] firms for the year 2014; and 258 aggregated industrial data consisting of 13,410[3] firms for the year 2015, across the various industrial sectors.

Since the data was drawn from annual financial statements and "collected by StatsSA survey from the different enterprises themselves, this data included a range of financial statistics in respect of enterprises in the formal business sector of the South African economy. It excluded the agriculture and hunting services; financial intermediation; insurance, pension funding and business services not elsewhere classified; government; and educational institutions". Furthermore, "information' collected for the financial year of enterprises that ended on any date between 1 July of a particular year and 30 June of the following year

[1] Refer to page 67 of the link http://www.statssa.gov.za/publications/P0021/P00212013.pdf
[2] Refer to page 67 of the link http://www.statssa.gov.za/publications/P0021/P00212014.pdf

[3] Refer to page 72 of the link http://www.statssa.gov.za/publications/P0021/P00212015.pdf

excluded enterprises that their fiscal year is varying from this calendar period" as stated by the StatsSA (Quarter 2: 2015).

This study specifically used the sample on annual firm-level accounting data for financing structure on South African micro, small, and medium-sized enterprises across all industrial sectors having:

- fewer than 500 employees for the period 2013, 2014 and 2015
- an average annual turnover of less than R288.0 million for large-sized enterprises
- lower than R144.0 million for medium-sized enterprises
- lower than 27.0 million for small-sized enterprises respectively

This is consistent with the guidelines in the National Small Business Amendment Bill for MSMEs in South Africa.

3.3 EMPIRICAL MODEL

In examining the effect that financing structure has on profitability, this study adopted the empirical research model of Abor (2007b) defined as:

$$Y_{i,} = \alpha_i + \beta_1 FS_i + \beta_2 SIZE_i + \beta_3 TANG_i + \beta_4 CR_i + \varepsilon_i$$

where i represents the sub-industrial firms; Y denotes the profitability level indicators; FS is for financial structure measured as total debt, short-term debt and long-term debt; $SIZE$ is the proxy for firm size; $TANG$ is the proxy for asset structure for firm fixed tangible assets; and CR is the proxy for firm current assets to current liabilities.

In this study, the profitability level was used as the dependent variable, which was the return on assets (ROA). It was regressed against the six indicators of MSMEs performance as the independent variable, which included total debt, long-term debt, short-term debt, size, asset tangibility, and current assets ratio, through the regression analysis.

3.4 DESCRIPTION OF VARIABLES

This study used the variables approach similar to the previous work of Michaelas et al. (1999) and Hall et al. (2004). However, this study classified the independent variables as total debt ratio, long-term debt ratio, short-term debt ratio, while the control variables were size, asset tangibility, and current assets ratio. These control variables are aligned and "approved by the relevant literatures as the suitable indicators for both SMEs and large firms' capital structure". As mentioned above, the purpose of this research study is to examine the influence of financing structure on performance of MSMEs in South Africa. In order to reach

the purpose of this study, the profitability level of MSMEs is used as the dependent variable, which is the return on assets (ROA). This is supported by the studies of Michaelas et al. (1999) and many other previous scholars, who have indicated that "the financing attitude of MSMEs usually varies across industries and its effect in the long-run and short-run finance".

Summarised in Table 6 are selected hypothesis, variables description, proxy, and its sources for this study. Variables are described in the form of proxies, which will be analysed based on the information available in the database. By implementing the particular relevant ratios demonstrated in the Table, supposed variables are obtained for the regression analysis; also, the profitability ratio, the proxy derived from six ratios separately for each year of observation, 2013, 2014 and 2015 respectively.

Table 6: Summary of Hypothesis, Variables Description, Proxy, and its Sources

Hypothesis	Variables Description	Proxy	Sources
Dependent Variable			
	Profitability: Return On Asset	"Net profit before providing for company tax and dividends to total assets"	AFS, as stated by previous scholars
Independent Variables			
H1	Total debt	"Ratio of total debt to total assets"	AFS, StatsSA
H2	Long-term debt	"Ratio of long-term debt to total assets"	AFS, StatsSA
H3	Short-term debt	"Ratio of short-term debt to total assets"	AFS, StatsSA
Control Variables			
H4	Size of the Firm	"Logarithm of Total assets"	AFS, StatsSA
H5	Asset tangibility	"Tangible assets fixed to total assets"	AFS, StatsSA
H6	Current Asset Ratio	"Current assets to current liabilities"	AFS, StatsSA

Sources: AFS, and Statistics South Africa 2013, 2014, 2015

3.4.1 Profitability

This study measured financial structure as the profitability level of the return on assets. The studies of Myers and Mal (1984) and Abor (2005) described profitability as "the ability of firms to generate acceptable amount of profit and earnings internally to finance their project and the firm's operations, by using the common accounting-based measure: the firm's ratio net profit before providing for company tax and dividends to total assets".

However, some studies have found that a mix relationship exists between a firm's profitability, and use of equity and debt financing in its operations. This is supported by the empirical results of Hadlock and James (2002), Petersen and Rajan (1994). However, Myers

and Majluf (1984) concluded that "there is a negative relationship between the firm's profitability and the level of leverage. This is compatible with pecking order theory and other relevant studies" similar to that of Cassar and Holmes (2003).

The studies of Abor (2005), found that a "positive relationship exists between profitability' and firm size. Myers (1977) highlighted that "there should be a negative relationship between growth opportunities and level of debt, since many firms are faced with conflicts that arise from the problems of agency cost theory". Furthermore, "it becomes significant for assets that provide a firm with growth opportunities in the future". "The firm would be financed with less debt if the firm investment concentrated on such assets". In contrast, Hall et al. (2004) argued "that there is a positive relationship between gearing and growth since it makes incentive for companies to borrowing extra fund to expand their investment". Furthermore, Michaelas et al. (1999) emphasised that "there should be a positive correlation between level of debt and future growth". It could lead to decreases in agency and bankruptcy costs if the firm has more short-term debt than long-term debt.

Overall, therefore, the hypothesis indicates that "there is a positive relationship between growth and future growth opportunities." Chittenden et al. (1996). They also support the hypothesis that fast growing firms, as well as firms that have relatively large research and development expenditures, tend to have high gearing ratios in small firms. Most previous scholars "have found a negative relationship between profitability and capital structure, which is consistent with the pecking order theory", see the studies of Van der Wijst and Thurik (1993); Chittenden et al. (1996) and Michaelas et al. (1999).

3.4.2 Debt Financing

The studies of Damodaran (2001) and Fatoki (2014), have described debt finance as "any financing vehicle that is a contractual claim on the firm, creates a tax deductible interest payment, has a fixed life, and has priority claims on cash flows in both the operating and bankruptcy periods". Bankruptcy "occurs when the total liabilities of a firm exceed its total assets". According to Feakins (2005), "commercial banks are a principal source of debt finance for new SMEs". Commercial banks offer a "wide range of services such as overdraft facilities, term loans, trade bill financing, factoring, leasing, export and import finance, and

even government loan guarantee schemes within their own right or through wholly or partially owned subsidiaries".

According to Wu et al (2008) and Abdulsaleh and Worthington (2013), the literature has identified three significant types of debt financing for MSMEs:

1. "Unlike managers of large firms, the MSMEs tend to be more attached to commercial lenders, especially institutional lenders, as a source of short-term debt financing that can be renewed for long-term debt".
2. "As information asymmetry problems are more acute in MSMEs, long-term lending relationships are important for MSMEs in order to deal with the resultant agency problems along with the other three conventional mechanisms; signalling, monitoring and bonding (the provision of guarantee or collateral)".
3. "In concentrated owner-managed MSMEs, and contrary to what the agency theory suggests, it is not clear whether debt can lower the agency costs that result from information asymmetry arising due to different motives of owners and managers".

Therefore the overall results, consistent with the studies of Cassar and Holmes (2003), have "found negative relationships between profitability and both long-term debt and short-term debt ratios to be consistent with the pecking order theory". Petersen and Rajan (1994) however, "found a significantly positive association between profitability and total debt ratio".

3.4.3 Firm Size

Previous scholars have not reached consensus on the notion of measuring the firm size, and would rather use typically total assets, or sales, or the number of employees, or quit rates (QR) as indicators of size. In this study I have chosen to describe the size of a MSME as a logarithm of total assets, a set criterion that can be applied to measure the firm size, that may have an effect on its activities, its financial decisions, and its potential to expand. This approach is supported by Memba (2011), and Abdulsaleh and Worthington (2013).

According to studies of Heshmati (2001), "there should be a negative relationship between the firm size and the debt level for companies that are listed". They have easy access to the equity market, in contrast to the smaller firms or unlisted companies which have low fixed costs and high risk profile associated with the firm size.

Titman and Wessels (1988); Fama and French (2002) have suggested “a positive relationship between a firm’s leverage and its size stressed out, so that when the value of the firm increases, the ratio of direct bankruptcy costs to the firm value would decrease”.

Rajan and Zingales (1995) reported “that the effect of these expected bankruptcy costs might be little on large firms’ borrowing decisions, which empower them to take on more leverage”. Fama and Jensen (1983) also emphasised “that small firms are faced with larger transaction cost and asymmetric information problem, compared to large firms”. Therefore, “it is expected that large firms prefer to raise fund from equity rather than debt”. “It is costly for small firms to disperse asymmetric information; often, financiers are not willing to offer small firms capital” due to lack of information about the firm, as per studies of Ferri and Jones (1979).

Therefore, in general the hypothesis is that there is a positive relationship between large firms’ size and profitability, because they can tolerate more debt and more timeously service it than small-size firms can. However, the profitability of small firms will differ over time, due to various economic cycles, as supported by the studies of Michaelas et al. (1999) and Abor (2008). Profitable large-size firms “are more attractive to financial institutions as lending prospects, therefore they can always take on more debt capital than small-sized firms” as per studies of Ooi (1999) and Abor (2008). Therefore, the “firm size is considered as an inverse proxy of bankruptcy costs”. However, “trade-off theory assumes a more positive relationship between large firm size and profitability” than small firms, because “large size is assumed as a proxy for earnings volatility, and larger firms are generally more diversified and show less volatility”, according to Fama and French (2002).

3.4.4 Asset Tangibility

In this study, asset tangibility is described as “the ratio of a firm’s tangible fixed assets to total assets” as stated by previous scholars and including the StatsSA (Quarter 2: 2015). Harris and Raviv (1988) found that “the firm’s level of tangible and generic assets results in the higher liquidation value of the firm”. Cassar and Holmes (2003) regarded the firm’s assets tangibility “as one of the critical determinants of capital structure, and the contributor” in shaping the debt level of MSMEs. They suggested that “if a firm has more tangible assets it would decrease the probability of default, since the liquidation of the firm increases subsequently”. Therefore, “firms are less probable to be bankrupt after using debt

financing, which in turn decreases the debt financing cost and encourages the firms to increase the debt level" according to Heshmati (2001).

Sogorb-Mira (2005) observed that "asset tangibility is positively related to firm total leverage, if firms aim to match maturities of assets and liabilities, while it would be negative if leverage ratio were short-term".

Therefore, in general the hypothesis indicates that "there is a positive relationship between asset tangibility and profitability for large firms, although SMEs with a lower portion of tangible assets in their total assets are more likely to encounter difficulties in applying for outside finance because of the inability to provide the collateral required", according to Abdulsaleh and Worthington (2013).

3.4.5 Current asset ratio

In this study, current asset is described as "the ratio of a firm's current assets to current liabilities" as stated by previous scholars and including the StatsSA (Quarter 2: 2015). The studies of Titman and Wessels (1988) and Michaelas et al. (1999) also highlighted that the current assets such as inventories that should have a "positive relationship with short-term debt, but have insignificant relationship to long-term debt, since inventories are a short-term asset in nature".

A contrary result of the studies of Sogorb-Mira (2005) was that "the negative correlation between asset structure and short-term debt ratio means that short-term debt, which is a current liability, is used to finance non-fixed assets, consisting basically of current assets". Therefore, the overall results found a "negative relationship between the fixed asset and profitability", which is supported by the studies of Brealey and Myers (2000) and Abor (2008). Their "so-called maturity matching principle" found that "if firms aim to match maturities of assets and liabilities, we should expect a positive relationship between fixed assets ratio and profitability in larger firms because they are able to finance more fixed assets in the long-term period. On the other hand, we should observe a negative profitability relationship with smaller firms, even if it were in a short-term period, because naturally they have low fixed assets because they are initially not in a position to finance the acquisition of more fixed assets".

Table 7 below describe the hypotheses which this study intends to test. Each hypothesis explains one financing structure influence that is related either to trade off theory (TOT) or pecking order theory (POT).

Table 7: Summary description of Tested Hypotheses

Proposed hypotheses	**Associated Theories**
"There is a positive association between total debt ratio and profitability "	Pecking Order Theory (POT)
"There is a negative association between long-term debt ratio and profitability"	
"There is a negative association between short debt ratio and profitability"	
"There is a positive relationship between firm size and profitability"	Trade Off Theory (TOT)
"There is a positive relationship between asset tangibility and profitability"	
"There is a negative relationship between current asset ratio and profitability"	

Sources: Author's compilation from various sources

3.5 ESTIMATION APPROACH

The regression model was estimated using the cross-sectional ordinary least squares (OLS) estimation techniques. The assumption underlying the OLS includes leverage usage across the industrial sectors. It takes into the account the empirical research model of Abor (2007b) "in order to deal with simultaneity bias with the inclusion of the lagged dependent variables among the independent variables". It follows the method adopted by Brown and Kim (1993), Li et al (2007) and Alhassan and Biekpe (2016). The OLS regression model was used to account for multicollinearity of the factors presented in Table 1. The OLS estimation results are presented in Table 11 and Appendices B to D.

We also used the correlation matrix in Table 10 to show all the correlation coefficients among the independent variables. Overall analyses of correlation coefficients between the independent variables are at below 0.70. Furthermore, the regression model was undertaken to provide an understanding of the industrial effect on the leverage-performance relationship in South Africa. The usual procedures of OLS are somewhat "all or nothing" ways of utilising the between-group variation. In OLS, the variation between-group and within-group is just added up. Usually in cross-section data, a test of significance is applied to test whether the constant terms are significantly different from each other. We have the OLS estimate; and for θ very large, we have the between-group regression estimates. Noting

that the between-group regression coefficient $\propto$ is close to 1, and the coefficient of β is close to 0, we can show that the OLS estimate of $\propto$ will be upward biased and that of β downward biased. I found similar results in the studies of Baltagi (1995) and Abor (2007b).

"Analysis of variance (ANOVA) is a statistical technique specially designed to test whether the means of more than two quantitative populations are equal", as per studies of Levin and Rubin (1994). This is done via the mechanism of the F test for testing the significance of the difference between two variances. This study used this test because it allows one to analyse two or more groups and thus test for significant difference between means. "Compared with using multiple t-tests, ANOVA requires fewer measurements to discover significant effects". "ANOVA is a powerful tool for determining if there is a statistically significant difference between two or more sets of data" as per the study of Patten (2002). The ANOVA test is also useful in measuring variations within a group.

CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSION

4.0 INTRODUCTION

An important concept in this dissertation is that of the problem of "The Valley of Death", a concept adopted from the studies of Ehlers (1998) and Wonglimpiyarat (2015). As stated in Chapter One, it refers to the period of potential failure of a MSME between its basic research process and applied research. The cause of "death" is gaps in the knowledge of the aspirant entrepreneurs. Gaps in knowledge that stunt growth in MSMEs include the forms and types of industry, firm size, asset tangibility, and current assets in relation to current liabilities and profitability level.

This chapter presents a discussion of the data analysis based on the methodology described in Chapter Three. It covers summary statistics of the variables, the correlation analysis, and the discussion of the regression results, in order to uncover the "gaps" that cause "The Valley of Death" in the life cycle of MSMEs in South Africa.

4.1 SUMMARY STATISTICS

This section describes the characteristics of my data. It explains the statistical findings of the financial data obtained from the annual financial statistics of the MSMEs across various industries in South Africa covering the period 2013, 2014, and 2015. Dependent variable is identified as ROA: return on assets. Independent variables include TDR: total debt ratio; $LTDR$: long-term debt ratio; and $STDR$:short-term debt ratio; while control variables are identified as follows: $SIZE$: firm size; $TANG$: asset tangibility; and CR: current assets ratio for the MSMEs. Table 9 covers Mean, Median, Standard Deviation, and Maximum and Minimum levels for each variable covering the period 2013, 2014, and 2015 to provide a simple summary of how variables are distributed comparatively.

A summary of statistics as presented in Table 8 below shows an average ratio of 0.1029, 0.1009, and 0.0927 respectively for ROA. This suggests that an average ratio has decreased to 9% in profitability in the period of the study sample, in which we found a much greater difference between MSMEs' profitability with a -0.372% minimum level from 2013 to a 0.541% maximum level in 2015.

With respect to the mean debt ratios, the TDR shows an average ratio of 0.6472, 0.6431, and 0.6395 respectively. This indicates a 64% decrease of total debts to total assets, with a great variance between MSMEs' total debt of a 2.723% maximum level in 2013 to almost 0.000% at a minimum level in 2013 and 2014.

The LTDR shows an average ratio of 0.5996, 0.3725, and 0.6334 respectively. The STDR shows an average ratio of 0.3872, 0.6206, and 0.3666 respectively. However, if we separate the total debts into current debts and fixed debts, our study samples show that long-term debt financing for MSMEs decreased to 37% in 2014 but increased to 63% in 2015. Short-term debt financing increased to 62% in 2014 but decreased to 37% in 2015. These results are consistent with the study by Abor (2008) mentioned in my empirical review on debt financing. It indicated that in both short-term and long-term debt ratios, profitable firms would rely initially on debts repayable in less than one year, or less costly funds generated internally, and subsequently look for debts repayable in more than one year or external resources if additional funds are needed. This was supported by Myers (1984) in the pecking order theory.

The mean of the variance in the logarithm of total assets that affects the MSMEs' potential to expand, and its financial decision, over the period 2013-2015, indicates that an average ratio was almost 3.7417, 3.642, and 3.8661 respectively in terms of the firm size. The finding indicates a minimum level of 0.000% in 2013 to 2014, and a maximum level of 6.036% in 2014.

With regard to asset tangibility, findings show an increase to 3.9868 in 2015 on MSMEs' tangible assets fixed to total assets value, with a minimum low range of -29.571% to almost 5.590% at a maximum range. Meanwhile, the findings on the current assets ratio of MSMEs show an average ratio of 1.4662, 1.5514, and 0.2495 respectively over the period of study, with a great variance of a -0.909% at a minimum level in 2015 to almost 12.6% at a maximum level in 2014.

Table 8: Summary Statistics

	Mean	Std. Dev	Minimum	Maximum
		2013 (N=228)		
ROA	0.1029	0.1081	-0.3723	1.0000
TDR	0.6472	0.2642	0.0000	2.7234
LTDR	0.5996	0.2186	0.0000	1.0000
STDR	0.3872	0.2121	0.0000	0.9108
SIZE	3.7417	0.9843	0.0000	5.8609
TANG	-0.2853	2.8210	-29.5714	0.8695
CR	1.4662	0.8379	0.0000	9.0000
		2014 (N=290)		
ROA	0.1009	0.1443	-0.6250	1.3333
TDR	0.6431	0.2260	0.0000	2.3905
LTDR	0.3725	0.2025	0.0000	0.9702
STDR	0.6206	0.2066	0.0000	1.0000
SIZE	3.6420	0.9805	0.0000	6.0358
TANG	0.2562	0.1808	0.0000	1.0000
CR	1.5514	1.0331	0.0000	12.6000
		2015 (N=258)		
ROA	0.0927	0.0977	-0.4807	0.5411
TDR	0.6395	0.1617	0.1452	1.2361
LTDR	0.6334	0.1906	0.0303	0.9760
STDR	0.3666	0.1906	0.0240	0.9697
SIZE	3.8661	0.7503	1.9685	6.0232
TANG	3.9868	0.7179	2.1004	5.5897
CR	0.2495	0.2026	-0.9093	0.8376

Note: "ROA=Return on Assets; TDR=Total debt ratio; LTDR=Long term debt ratio; STDR=Short term debt ratio; SIZE= Firm size; TANG= Asset tangibility; CR=Current assets ratio". Source: Author's estimates from Research Data, 2017

4.2 LEVERAGE ACROSS INDUSTRIAL SECTORS

Table 9 presents the further analyses that were carried out to examine the differences in leverage usage across the industrial sectors: Trade; Transport, storage and communication (TSC); Construction; Manufacturing; Activities auxiliary to financial intermediation (AAFS); Mining and quarrying (M&q); Forestry and fishing (F&f); Community, social and personal services (CSP); and Electricity, gas and water for the period 2013, 2014, and 2015 respectively. The results indicated that the firms within Trade; TSC; Construction; Manufacturing; AAFS and M&Q sectors show higher debt ratios (TDR) than those firms which were in F&F; CSP, Electricity, gas and water sectors across all three periods of my study. Therefore, this suggests that those firms in those industrial sectors attract more debt in their financing structure than those firms with lower debit ratios. The composition (long-term or short-term) of debt is also presented in Table 9 below. It is observed that in 2013 and 2015,

long-term debt was the dominant form of leverage used by firms across all industrial sectors; 2014 witnessed higher usage of short-term debt compared to long-term debt.

Table 9: Leverage across industrial sectors

	2013			2014			2015		
	TDR	**LTDR**	**STDR**	**TDR**	**LTDR**	**STDR**	**TDR**	**LTDR**	**STDR**
Trade	0.7126	0.6206	0.3794	0.7096	0.3397	0.6603	0.7050	0.6847	0.3153
TSC	0.7048	0.6039	0.3961	0.7095	0.3451	0.6549	0.7094	0.5993	0.4007
Construction	0.6792	0.6675	0.3325	0.6857	0.3618	0.6382	0.6659	0.6419	0.3581
Manufacturing	0.6673	0.6317	0.3683	0.637	0.3557	0.6443	0.6299	0.6530	0.3470
AAFS	0.6587	0.6137	0.3619	0.7064	0.4078	0.5922	0.6720	0.6067	0.3933
M&Q	0.6375	0.4498	0.4947	0.6552	0.5054	0.4946	0.6523	0.5063	0.4937
F&F	0.5994	0.4960	0.5040	0.5589	0.4975	0.5026	0.5433	0.4634	0.5366
CSP	0.4973	0.5901	0.4099	0.5152	0.3634	0.6088	0.5385	0.6261	0.3739
Electricity, gas and water	0.4069	0.3469	0.4031	0.4220	0.3934	0.3567	0.5452	0.5144	0.4856

Note: "F&F= Forestry and fishing; Mining and quarrying; TSC= Transport, Storage and Communication; AAFS= Activities auxiliary to financial intermediation; CSPS= Community, social and personal services; TDR=Total Debt Ratio; LTDR=Long term debt ratio; STDR=Short Term Debt Ratio". Source: Author's estimates from Research Data, 2017

4.3 CORRELATION ANALYSIS

Presented in Table 10 is the correlation matrix in my empirical model. It shows that the overall correlation coefficients between the independent variables are at below 0.70 for the period 2013, 2014, and 2015, respectively. Kennedy (2008) affirmed that 0.70 is the level above which multicollinearity exists. Therefore, the correlation matrix shows several significant relationships between the variables. The results of the MSMEs' sample correlation analysis show that the total debt ratio has significant positive relationships with STDR and asset tangibility at 1% and 10% levels respectively. It has significantly negative relationships with CR and LTDR at 1% and 10% levels respectively for the period 2013. However, in 2014 we find that the total debt ratio has significantly positive relationships with LTDR and size at 1% levels, but significantly negative relationships with STDR and CR at 1% levels. The 2015 results show that the total debt ratio has significantly positive relationships with size and asset tangibility at 1% levels, but significantly negative relationships with CR at 5% level.

In the Correlation analysis results for the long-term ratio we find significantly positive relationship with CR at 10% level, but significantly negative relationships with SDTR and asset tangibility at 1% levels for the period 2013. Although we find significantly positive relationships with CR, size and asset tangibility at 1%, 5% and 10% levels respectively in

2014, they have a significantly negative relationship in STDR at 1% level. Meanwhile, in 2015 we find all relationships with STDR and CR significantly negative at 1% levels.

In the short-term ratio results for sample correlation analysis results, we find a significantly positive relationship with asset tangibility and firm size at 1% and 5% levels respectively for the period 2013. However, in 2014 we find all significantly negative relationships with asset tangibility at 1% level. In 2015 we find all significantly positive relationships with CR at 1% level.

In terms of the firm size for sample correlation analysis results, we find a significantly positive relationship with asset tangibility at 1% levels for period 2013, but it has significantly negative relationships with CR at 1% for the periods of 2013 and 2014 respectively. Meanwhile, in the correlation analysis results for the asset tangibility we find all significantly negative relationships with CR at 1% levels for the periods of 2013 and 2014, respectively.

Table 10: Correlation matrix

	TDR	LTDR	STDR	SIZE	TANG	CR
			2013			
TDR	1.0000					
LTDR	-0.115*	1.0000				
STDR	0.271***	-0.860***	1.0000			
SIZE	0.0770	0.0490	0.163**	1.0000		
TANG	0.125*	-0.185***	0.184***	0.322***	1.0000	
CR	-0.285***	0.112*	-0.0060	-0.261***	-0.381***	1.0000
			2014			
TDR	1.0000					
LTDR	0.257***	1.0000				
STDR	-0.156***	-0.918***	1.0000			
SIZE	0.160***	0.144**	-0.0170	1.0000		
TANG	0.0350	0.385***	-0.330***	0.0380	1.0000	
CR	-0.288***	0.108*	-0.0560	-0.269***	-0.207***	1.0000
			2015			
TDR	1.0000					
LDR	-0.0780	1.0000				
STDR	0.0780	-1.000***	1.0000			
SIZE	0.191***	-0.1000	0.1000	1.0000		
TANG	0.238***	0.039	-0.0390	0.4080	1.0000	
CR	-0.128**	-0.321***	0.321***	0.0500	-0.0630	1.0000

*Note: 'TDR=''Total debt ratio; LTDR=Long term debt ratio; STDR=Short term debt ratio; SIZE= Firm size; TANG= Asset tangibility; CR=Current;***, ** and * denotes significance at 1%, 5% and 10% respectively". Source: Author's estimates from Research Data, 2017*

4.4 REGRESSION RESULTS ANALYSIS

Table 11 presents the results of the Ordinary Least Squares (OLS) cross-sectional estimations to examine the effect of leverage on performance and profitability. The regression model was estimated for each industrial sector to examine the industrial differential in the leverage-performance relationship for the periods 2013, 2014, and 2015. This was done to provide an understanding of the industrial effect on the leverage-performance relationship in South Africa.

4.4.1. Leverage and Performance: Cross-Sectional Analysis

Table 11 shows the estimated effects of leverage and profitability for cross-sectional analysis for the influence on performance of MSMEs in South Africa using the ordinary least squares technique for the periods 2013, 2014, and 2015. The model diagnostics of the estimations assert the appropriateness of the model in explaining the influence of financing structures on MSMEs' performance in South Africa across all cross-sectional periods.

Mode1s 1, 2 and 3 reflect the effect of total debt ratio (TDR), long-term debt ratio (LTDR), and short-term debt ratio (STDR) respectively. From the OLS estimations, the adjusted $\boldsymbol{R}$-squared of 0.1582, 0.1440, and 0.1272 implies that the debt ratios and three control variables explain 15%, 14%, and 12% respectively for Models 1, 2, and 3 for the influence of financing structures on performance of MSMEs in South Africa during the period 2013. The estimated adjusted $\boldsymbol{R}$-squared was 0.1184, 0.0721, and 0.0773 respectively for Models 1, 2, and 3 in 2014, and 0.1402, 0.0444, and 0.0444 respectively for Models 1, 2, and 3 in 2015. This indicates that for Model 1, 2013 had a greater explanatory effect on performance, followed by 2015 and 2014 in that order. Similar effects are also observed for Models 2 and 3 across all cross-sectional periods.

Consistent across cross-sectional periods (2013, 2014, and 2015) in Model 1, a significant negative effect is observed for TDR at 1% level of significance. This indicates that increases in the usage of leverage decreases financial performance of MSMEs in South Africa. The negative effect is observed to have been greater in 2015 (19.3%) compared to 2014 (16.1%) and 2013 (9.9%) for every percentage increases in total debt.

However, a positive and significant effect is observed for long-term debt (LTDR) in 2013 at 1%, while short-term debt (STDR) exhibits significant negative effect at 5%. This suggests that the overall negative effect of leverage on performance is driven by the usage of short-term debt. These effects are reversed in 2014, where the coefficient of long-term debt becomes negative, while that of the short-term debt becomes positive at 10% and 5% respectively. The coefficients of long-term and short-term debt maintain their signs for 2014 but are insignificant. This finding is consistent with studies by Abor (2008), who found "that mixed results for both long-term and short-term debt ratios appear to have inverse associations with profitability in all the sample categories".

From the results in Table 11, a negative relationship is observed between firm size and profitability across all periods. However, the relationship is significant across all three models in 2014 and 2015 but only significant in Model 2 for 2013. This indicates that increasing firm size reduces its profitability. This could be explained by the diseconomies of scale associated with the operation of large firms, which increases the firm's operational activities by duplicating its resources. This finding is consistent with studies by Ferri and Jones (1979) and Fama and Jensen (1983), they also "found that the firm size and total debt leverage are negatively" related to influence the MSMEs' performance, "due to larger transaction cost and asymmetric information problem in smaller firms".

However, this result is contrary to the previous empirical studies of Titman and Wessels (1988), who found a positive influence of the firm size on performance of MSMEs. This positive relationship between a firm's leverage and its size can be explained by the fact that "when the value of the firm increases, the ratio of direct bankruptcy costs to the firm value would decrease". This view is supported by Fama and French (2002).

A conflicting effect of asset tangibility on profitability is observed across the years under study. While the coefficient is observed to have been negative and significant in 2013, it became positive and significant in 2014 and 2015 across all three models. This result is inconsistent with the previous empirical studies that found a positive influence of assets tangibility value on performance of MSMEs. Sogorb-Mira (2005) found that "asset tangibility is positively related to firm total leverage, if firms aim to match maturities of assets and liabilities, while it would be negative if leverage ratio were short-term". This negative result on asset tangibility could further be explained by the MSMEs with a lower portion of fixed tangible assets. Their situation influences their inability to provide the required collateral. Therefore, they encounter difficulties in applying for outside long-term debt as financing structure. This supports previous literature justifications by authors such Abdulsaleh and Worthington (2013).

The effect of current ratio on profitability is observed to be significant only in 2014 in Models 2 and 3. The positive coefficients indicate increases in liquidity results, which in turn increases the profitability of MSMEs in South Africa. This can be explained by the fact that current assets such as inventories are a short-term asset in nature; they should have a positive relationship with short-term debt, but have an insignificant relationship to long-term debt. This finding is supported by the studies of Titman and Wessels (1988) and Michaelas et al. (1999).

Table 11: Leverage and Profitability

	2013			2014			2015		
Models	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**
	Coef.	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*
Constant	0.197***	0.073**	0.139***	0.226***	0.121***	0.040	0.170***	0.091**	0.078**
	(0.038)	(0.035)	(0.034)	(0.047)	(0.041)	(0.053)	(0.037)	(0.042)	(0.037)
TDR	**-0.099*** **			**-0.161*** **			**-0.193*** **		
	(0.026)			**(0.037)**			**(0.036)**		
LTDR		**0.102*** **			**-0.089* **			**-0.013**	
		(0.031)			**(0.046)**			**(0.034)**	
STDR			**-0.081** **			**0.098** **			**0.013**
			(0.032)			**(0.042)**			**(0.034)**
SIZE	-0.010	-0.013*	-0.008	-0.019**	-0.019**	-0.022**	-0.089***	-0.086***	-0.086***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.009)	(0.009)	(0.020)	(0.022)	(0.022)
TANG	-0.010***	-0.008***	-0.009***	0.123***	0.171***	0.168***	0.096***	0.084***	0.084***
	(0.003)	(0.003)	(0.003)	(0.045)	(0.051)	(0.049)	(0.021)	(0.023)	(0.023)
CR	0.004	0.010	0.014	0.012	0.025***	0.024***	0.024	0.036	0.036
	(0.009)	(0.009)	(0.009)	(0.008)	(0.009)	(0.008)	(0.029)	(0.032)	(0.032)
F-stat	11.67	10.55	9.27	10.7	6.62	7.05	11.47	3.98	3.98
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0037	0.0037
R-squared	0.1730	0.1591	0.1426	0.1306	0.0850	0.0901	0.1535	0.0593	0.0593
Adj. R-squared	0.1582	0.1440	0.1272	0.1184	0.0721	0.0773	0.1402	0.0444	0.0444
Root MSE	0.0992	0.1000	0.1010	0.1355	0.1390	0.1387	0.0906	0.0955	0.0955
Observations	228	228	228	290	290	290	258	258	258

*Notes: "TDR=Total debt ratio; LTDR=Long term debt ratio; STDR=Short term debt ratio; SIZE= Firm size; TANG= Asset tangibility; CR=Current; Standard errors in parentheses; ***, ** and * denotes significance at 1%, 5% and 10% respectively". Source: Authors estimates from Research Data, 2017*

4.4.2 Leverage and Performance: Industrial Sectors Analysis

As a form of robust analysis of results shown in Table 12, I also discuss the effects of leverage on performance across industrial sectors separately on MSMEs in South Africa. Furthermore, apart from checking for the relationship and consistency of the OLS estimates, the full parameter estimations presented in Appendices B to D enabled me to compare the effects of independent variables on the dependent variable across industrial sectors by analysing the behaviour of the adjusted R-squared in estimations covering the periods 2013, 2014, and 2015, respectively.

As presented in Table 12 for 2013, we find a negative and significant relationship between total leverage and profitability for firms in the trade, transport and auxiliary financial services sectors at 1% 5% and 10% respectively. This indicates that the negative effect of leverage on profitability is mostly pronounced among these three industrial sectors. The mining and quarrying sectors at 5% are significant in 2014, while the adjusted R-squared indicates that the sectors considered account for 65.16%. The manufacturing sectors consistently exhibit a negative relationship with total debt ratio at 1% and 5% for the periods 2014 and 2015, with the adjusted R-squared accounting for 26.35% and 3.83% respectively.

We find a negative relationship between performance and total debt ratio for trade sectors at 1% for periods 2013 and 2014, but at 10% in 2015. Transport sectors consistently show significant negative relationship with total debt ratio across at 5%, 10% and 1% for the periods 2013, 2014, and 2015 respectively.

Activities auxiliary to financial intermediation sectors also exhibit a negative relationship, with total debt ratio across industrial sectors at 10% for the period 2013, and at 5% in both 2014 and 2015. The adjusted R-squared for the OLS-PCSE estimation shows that the trade sectors considered accounted for 79.45% in 2013, 77.76% in 2014, and 5.73% in 2015 of the variations in the influence of total debt on performance of MSMEs in South Africa. This is compared with 92.79% for period 2013, 43.63% in 2014 and 59.3% in 2015 for the transport, storage and communication sectors. Meanwhile, the adjusted R-squared for the activities auxiliary to financial intermediation sectors indicates that the sector considered accounted for 8.07% in 2013, 10.35% in 2014, and 27.36% in 2015.

We find a negative relationship between the community, social and personal services sectors at 5% significance level during the period 2015 only, while the adjusted R-squared indicates that the sector considered accounted for 45.82%. Thus I conclude that the characteristics of leverage and performance relationship across industrial sectors drive the

influence of total debt on performance of MSMEs in South Africa. This is in line with the findings of Myers (1977) and Stiglitz and Weiss (1981) that, "Many firms and sectors are faced with conflicts that arise from agency problem theory, such as asymmetric information and moral hazards. This can impact on the availability of credit and hence the capital structure of MSMEs".

Table 12: Leverage Performance relationship across industrial sectors[1]

		M&Q	MANU	TRADE	TRANSPORT	AUXFINASERV	CSP
2013	**TDR**	0.029	-0.04	-0.223***	-0.258**	-0.104*	0.038
	Adj. R^2	0.118	0.0326	0.7945	0.9279	0.0807	-0.0762
	N	18	59	40	21	41	31
2014	**TDR**	-0.324**	-0.213***	-0.253***	-0.464*	-0.227**	0.261
	Adj. R^2	0.6516	0.2635	0.7776	0.4363	0.1035	0.2409
	N	18	130	33	15	40	36
2015	**TDR**	-0.07	-0.125**	-0.131*	-0.521***	-0.157**	-0.265**
	Adj. R^2	0.1002	0.0382	0.0573	0.593	0.2736	0.4582
	N	13	117	31	13	37	30

*Note: "TDR= Total Debt ratio; M&Q=Mining and quarrying; MANU =Manufacturing; TRADE=Trade; TRANSPORT=Transport, storage and communication; AUXFINASER=Activities auxiliary to financial intermediation, CSP= Community, social and personal services***, ** and * denotes significance at 1%, 5% and 10% respectively".*

Source: Author's estimates[1] from Research Data, 2017.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

In this chapter I summarise the main results deriving from the findings of this study. I make a conclusion, offer recommendations, reflect on limitations of the study, and mention areas for improvement.

The summary is based on the research questions posed at the beginning of this study:

1. Which financing structures are accessed by MSMEs in South Africa?
2. Does the financing structure influence the performance of MSMEs in South Africa?

To examine the influence of financing structure on performance of MSMEs, the three control variables used in this study were firm size, asset tangibility, and current asset ratio after use of the total debt, long-term debt, and short-term finance. These variables were empirically analysed to establish the MSMEs' profitability and performance after the use of financing structure.

5.1 SUMMARY

5.1.1 Which financing structures are accessed by MSMEs in South Africa?

This question in my study was to identify whether MSMEs use more leverage or equity in financing their operations. From the analysis, I can conclude that financing structure of MSMEs in South Africa is geared towards more debt across all industrial sectors. In addition, it can be observed that certain sectors are characterized by higher usage of leverage, namely: trade; transportation, storage and communication; construction; manufacturing; activities auxiliary to financial intermediation; and mining and quarrying.

5.1.2 Does the financing structure influence the performance of MSMEs in South Africa?

Table 13 below summarised both expected and actual correlations between the explanatory and control variables and the dependent variable of our financial structure model. The results in Table 13 revealed various significance levels of influence that the use of three debt financing models have on MSMEs' performance.

Table 13: Summary of the results achieved for the financing structure model

Explanatory and control variables	Expected results	Actual results
TDR	Positive	Rejected
LTDR	Negative	Rejected /Accepted
STDR	Negative	Accepted/rejected
SIZE	Positive	Rejected
TANG	Positive	Accepted/rejected
CR	Negative	Rejected

TDR: "Total debt ratio. $LTDR$: Long-term debt ratio. $STDR$: Short-term debt ratio. $SIZE$: Firm size. $TANG$: Asset structure. CR: Current asset ratio".
Sources: Various Authors.

In Table 12 we observed a higher usage of long-term debt in 2013 and 2015 than in the year 2014, as compared with the results in Table 11, in which a negative relationship was observed between firm size and profitability across all periods. However, the relationship is significant across all three models in 2014 and 2015, but only significant in Model 2 for 2013. Thus we can conclude that the characteristics of leverage and performance relationship across industrial sectors drive the influence of total debt on performance of MSMEs in South Africa. This is consistent with the findings of Myers (1977), and Stiglitz and Weiss (1981).

Taking motivation from Figure 1 which portrays "The Valley of Death", this study explored the gaps encountered by all MSMEs to grow their business. The research sought to examine the influence of financing structure on performance of MSMEs in South Africa. It used data samples drawn from the Annual Financial Statistics (AFS) Survey as adjusted by StatsSA. The data consisted of 228 firms for the year 2013, 290 firms for the year 2014, and 258 firms for the year 2015 across various forms and type of industrial sectors. I examined the effect of independent variables. The variables included return on asset, total debt ratio, long-term debt ratio, short-term debt ratio, firm size, asset tangibility, and firms' current assets towards their current liabilities and profitability level.

5.2 CONCLUSION

The objective of this research has been to contribute to the limited knowledge of the influence of financing structure on performance of MSMEs in South Africa. The ordinary least squares (OLS) technique of Buser and Hess (1983) was used to examine empirically the hypothesis that MSMEs' financing structures influence their performance. The results of my

empirical analyses covering the period 2013-2015 provide confirmation on the direction, significance, and extent of the regression coefficients of the financing structure's influences. These are not conclusive findings, but they are consistent with the pecking order theory, trade-off theory, market timing theory, and agency cost theory.

From the empirical estimations, we find that independent variables play a very significant role in driving the influence of financing structure on performance of MSMEs in South Africa. The overall results showed that a negative effect of leverage on performance is driven by the usage of short-term debt. However, the results are mixed and insignificant as the coefficient of long-term debt remains negative, while that of the short-term debt becomes positive; hence the results were accepted and rejected.

We find that firm size has a significantly negative relationship with debt leverage on performance of MSMEs in South Africa. That is why the results were rejected across all the period of study. These results were contrary to the empirical studies of Titman and Wessels (1988) and Fama and French (2002). They found firm size to be the most influential variable. It appears to affect the long-term debt level positively in large-sized firms, and it also has a very small positive influence on short-term debt for small-sized firms in South Africa. In other words, the older the firm, the better its ability to reduce transaction costs and information asymmetries, which in turn improves its chances, use its fixed assets as collateral to secure debt financing.

We found that the asset tangibility has a mixed relationship against debt leverage on MSMEs' performance in South Africa. Therefore, asset tangibility has been rejected for the period of 2013 but accepted across all the three models in the 2014 and 2015 periods. Additionally, we find a positive relationship between the current assets ratio and leverage with performance of MSMEs in South Africa. It is significant in model 2 and model 3; hence I rejected the results in my study.

Profitability can be defined as "the firms' ratio of the net profit before providing for company tax and dividends to total assets", according to the studies of Myers and Mal (1984) and Abor (2005). It is measured by using the common accounting-based. Our findings indicate confirmation that profitability is the most influential of borrowing decisions in total debt, long-term debt, and short-term debt. Profitability does not have the same influence in all the debt level; its significance is substantially higher for long-term debt than for total debt and short-term debt.

This vast variance in significance might be as a result of firms' age. Large-sized and much older firms are able to provide collateralised assets to access a long-term bank loan.

Rather than taking on debt financing, small-sized and younger firms have to rely more on funding generated internally in order to finance their operations and projects, once profitable. Their financiers try to avoid borrowing because of asset replacement danger. In other words, securing debt finance is influenced by the fixed asset, since it decreases the MSMEs' transactions costs and information asymmetry costs.

5.3 RECOMMENDATIONS

The matter of financing structure is an imperative strategic financing decision that MSME firms have to make in relation to their performance and profitability. The results of this study have brought some insights into the financing structure of South African firms.

Clearly, pecking order theory (POT) and trade off theory (TOT) seem to control usage leverage among the MSMEs in South Africa. It is therefore important to institute policies that refine the information environment. Firms, especially MSMEs, are continuously encouraged to maintain proper financial records.

Policy makers should place greater importance on the enablement of debt finance, since it offers a base for additional borrowing, and decreases firms' sensitivity to economic cycles.

There could also be policies that will encourage MSMEs firms to access funding; for example, there could be a decrease in the list of collateral requirements.

In addition, it is also appropriate for policy provision by governments and regulators to consider other factors, and to establish other financing schemes to assist MSMEs for in specific industries or sectors.

Furthermore, policy consideration should investigate entrepreneurial characteristics, such as the managerial competency of the owner. This could impact on entrepreneurial orientation and performance of MSMEs, and those enterprises owned by women and youth.

As per studies of Abor (2007a), "export-oriented firms and liability companies have easier access to finance. MSMEs should think about entering international markets, and sole-proprietorships are encouraged to consider more organised forms of business".

As I indicated earlier, when compared to other African countries, South Africa has the highest level of fear of failure in business. It could be influenced by intrinsic personality traits, or societal and regulatory practices, or a perceived lack of business profitability, and/or over-traded sectors populated by low profit margin businesses and a high level of competition for limited markets.

Much more analysis -- particularly cross-sectional variation, microeconomic data, and provincial- and industry-focused case studies -- is needed to discover in more detail the policies and financing tools that can help MSMEs to overcome financing constraints and deficiencies, that could increase their access to more external financing. In line with the studies of Abor (2007a), it seems especially relevant to focus on South African institutions' specifics that are significant for MSMEs' access to finance per industrial sector.

5.4 LIMITATIONS

Similar to the previous empirical research regarding the MSMEs' financial information, this study has also experienced some noteworthy limitations which may allow for further research studies to be conducted.

Firstly, MSMEs are not obliged to release their financial information. Those MSMEs who release their annual financial statistics (AFS) may choose to publish some part and inadequately. Lack of financial information and inadequate data leads to an incomplete dataset, which may result in a sample size within this research that is much limited only to formal MSMEs. In other words, the unavailability of data within this research has been the most crucial limitation in a study of MSMEs.

Secondly, the sample data for this study varies between the periods; however it excludes the enterprises whose financial year does not fall between 1 July of a particular year and 30 June the following year.

Thirdly, this study further excludes the financial information data of enterprises in the following sectors: agriculture and hunting services, financial intermediation, insurance, pension funding, and business services not elsewhere classified, and government and educational institutions.

5.5 IMPROVEMENTS

The findings from my empirical analysis have uncovered the "gaps" that cause "The Valley of Death" in the life cycle of MSMEs in South Africa. To help close the gaps, I offer some recommendations to improve the influence of financing structure on performance of MSMEs in South Africa.

Firstly, We recommend that considerable effort be made to improve on control variables across industrial sectors to further stimulate the influence of total debt on performance and growth of MSMEs in South Africa.

Secondly, the significant characteristics will provide sufficient indicators to inform a wide range of analysis that can include policy provision by governments and regulators on the financing structure to influence performance and growth on MSMEs positively in South Africa.

Thirdly, this research focused on three debt groups commonly used financing structure indicators as independent variables.

Fourthly, the analysis undertaken in this study can be experimented with in other ways:

- From a methodology viewpoint, in order to increase the correctness of the regression model
- Including financing structure indicators in the model
- Further research that includes more independent indicators to examine the influence of more financing structure on performance and growth of MSMEs in South Africa across all industrial sectors

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APPENDICES

Appendix A: summary overview of empirical studies with primary focus: examined the effect of financing structure on MSMEs profitability

No.	Study	Countries Covered	Period Covered	Estimation Method	Methodological Issues	Summary of Findings
1	Abor (2005)	Ghana	1998-2002,	"The panel regression model"	"Profitability analysed on accounting-based measure: the ratio of earnings before interest and taxes (EBIT) to equity), and Leverage ratios on short-term debt to the total capital; long-term debt to total capital; and total debt to total capital".	"The results found significantly positive relation on the short-term debt ratio and profitability, and a negative relationship on long-term debt ratio and profitability were also found". "A significantly positive association on the total debt ratio and profitability were found".
2	Abor (2007b)	Ghana and South Africa	1998-2003,	"Generalized Least Squares (GLS) panel model"	"Regression analyses were carried out to establish the relationship between capital structure and performance". "The GLS regression was found to be a more robust and appropriate specification". "The GLS heteroscedastic-consistent panel regression".	"The results found a significantly positive relationship on long-term debt with gross profit margin for both countries". "A significant and negative relationship was found between total debt to capital ratio and gross profit margin for both countries". "A statistically significant and negative were found between trade credit and gross profit margin for both countries".
3	Abor (2008)	Ghana	1998-2003,	"The panel regression analysis model"	"Prais–Winsten regression heteroscedastic method was used, by pooling of observations on a cross-sections unit". "Degrees of freedom are increased and collinearity among the explanatory variables was reduced".	"The results are mixed, found both long-term and short-term debt ratios appear to have inverse associations with profitability in all the sample categories".
4	Baker (1973)	US	1971	"The two-stage least square model"	"Two equations models were developed: (1) explaining industry profitability in terms of the usual market structure variables plus leverage, and (2) a new equation incorporating risk variables to explain leverage".	"A positive association between debt and profitability but for industries were found".
5	Degryse et al. (2012)	Netherlands	2003-2005,	"Econometric methodology models: correlation matrix and regression equation"	"The fixed-effects model introduces an individual-specific intercept term (i.e., firm specific or industry specific)". "The Hausman test rejected the null hypothesis that the explanatory variables and the individual effects (i.e., firm or industry) are uncorrelated."	"The results found a positive correlation exists between firm's growth profits and firm's debt increases level".

6	Gleason et al. (2000)	14[4] European Community member countries	1994	"The regression equation model"	"The model tested and grouped the hypotheses into four cultural clusters as the retailers' capital structures influences vary to each country".	"Negative impacts of leverage on the profitability of the firm were found".
7	Hadlock and James (2002)	US	1980-993,	"The logistic regression model"	"Estimated logit models predict likelihood that firm chooses bank finance as opposed to public debt or common stock".	"Positive significant correlations were found conclusive on firms' debt financing and higher returns".
8	Hashemi (2013)	Iran	2006-2010	"The statistic panel data regression"	"Used the qualitative research method: opinions, behaviours, events, social environment and relationships", and "quantitative research method: collects data and findings from statistical methods and other quantification procedures".	"The result found profitability with a strong impact on SMEs borrowing decisions".
9	Kolari and Hwan Shin (2004)	US	1994-2001,	"Univariate t-tests and multiple regression analyses"	"Empirical analyses were divided into two parts: (1) multivariate panel regression to tests effects of small business lending to banks' ROA, and (2) efficient frontier analyses to test effects of small business lending on banks' ROE and associated failure risk".	"The results found small business lending have positive effects on bank profitability ROA and higher ROE after lowering of bank failure risk".
10	Mateev et al. (2013)	Central and Eastern Europe (CEE).	2001–2005,	"Correlation matrix of model and panel data analysis"	"Modeling the leverage ratio as a function of firm specific characteristics hypothesized by capital structure theory".	"The results found cash flow coefficient remains negative and statistically significant only for medium-sized firms".
11	Mesquita and Lara (2003),	Brazil	1995-2001	"The Ordinary Least Squares (OLS) method"	"Tested the relationship between debt and profitability: ROE on ECP, ELP, PL, and LP/PL".	"The return rates found a positive correlation with short-term debt and equity, and an inverse correlation with long-term debt".
12	Michaelas et al. (1999)	UK	1998	"The regression equations and Least Squares Dummy Variable (LSDV) models"	"E- Views (Econometric Views) statistical package were used, for computation of White Heteroscedasticity-Consistent Standard Errors and Covariance that accounts for heteroscedasticity, which is likely to occur in panel data analysis".	"The results found a positive correlation exists between level of debt and future growth".
13	Ono and Uesugi (2009)	Japan	2002	"The probit regression model for collateral and exogeneity test"	"The OLS regressions were run for possibly endogenous variables, RATEij and GUARij, on all other independent variables, while ran the probit regression for COLLij on all exogenous variables and the residuals obtained in the first step".	"A positive correlation exists on SMEs' use of collateral and access to debt finance".
14	Ou and Haynes (2006)	US	1993-1998,	"Logistic regression model and multivariate analyses"	"Standard logistic regression used on of additional internal equity capital, but a logistic regression algorithm with error corrections on external acquisition of external equity".	"A Positive result was found on younger, lower quality firms to attract internal equity capital than firms".

[4] Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, and UK

15	Petersen and Rajan (1994)	US	1988-1989,	"The two-sided tobit regression model"	"The ordinary least squares cannot be used since both dependent variables expressed as percentages and censored at 0 or 100". "The coefficients would be biased toward zero".	"A positive association between debt and profitability but from few lenders were found".
16	Ramalho and Da Silva (2009)	Portugal	1999	"A two-part fractional regression model"	"Used binary choice model to explain the probability of a firm raising debt, and a fractional regression model to explain the relative amount of debt issued".	"The results found negative effects on leverage for profitability and liquidity, but a positive firm growth".
17	Roden and Lewellen (1995)	US	1981-1990,	"The multinomial Logit Model Estimates"	"The model treated major sources of funding as joint dependent variables to represent proportions of LBO financing packages".	"A significantly positive relation between profitability and total debt as a percentage of the total buyout-financing package".
18	Schäfer,Werwatz and Zimmermann(2004)	Germany	1999-2003	"Series of Logit models"	"Model used binary dependent variable to distinguish between equity to BTU or ERPB and debt financing to ERPK programme". "It's slope coefficients are robust to choice-based-sampling in econometrics".	"A high significant chance was found on SMEs with low cost margin and low ratio equity of assets to receive equity finance".
19	Sogorb-Mira (2005)	Spain	1994-1998,	"Econometric methodology models: correlation matrix and regression equation"	"Modelling the leverage ratio as a function of firm specific attributes hypothesized by capital structure theory."	"The results found tax shields and profitability were both negatively related to SME leverage, while size, growth options and asset structure influence positively SME capital structure".
20	Taub (1975)	US	1960-1969,	"The likelihood-ratio statistical model"	"A total of eight equations were estimated to account for the two measures of the debt-equity ratio and the four measures of the firm's rate of return and uncertainty of earnings".	"A significantly positive relationship between debt ratio and measures of profitability were found".
21	Titman and Wessels (1988)	US	1974-1982,	"The correlation matrix robust analysis"	"The Annual Compustat Industrial Files and the quit rates data were used on the measurement and structural models using the application of the LISREL system".	"The results found a positive relationship between size and the total market value of the firm. Short-term debt ratios found small firm to be negative, due to high transaction costs on long-term financial instruments borrowings".
22	Yegon et al. (2014)	Kenya	2004-2012,	"Linear regression model"	"Profitability is measured Return on Equity (ROE), and Leverage ratios included Short-term debt (current liabilities) to the total assets"; "Long-term debt (fixed liabilities) to total assets and Total debt (total liabilities) to total assets".	"A significantly positive relationship on the short-term debt and profitability, and a negative relationship on long term debt and profitability were found".

Appendix B: Leverage and Performance: Industrial Sectors Analysis in 2013

2013	M&Q	MANU	TRADE	TRANSPORT	AUXFINASERV	CSP
	Coef.	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*
Constant	0.025	0.052	0.255***	0.277**	0.097	0.123
	(0.071)	(0.098)	(0.070)	(0.114)	(0.061)	(0.140)
TDR	0.029	-0.040	-0.223***	-0.258**	-0.104*	0.038
	(0.062)	(0.041)	(0.024)	(0.091)	(0.056)	(0.100)
SIZE	0.006	0.008	0.002	-0.002	0.010	-0.014
	(0.016)	(0.014)	(0.011)	(0.012)	(0.014)	(0.033)
TANG	-0.057**	-0.002	-0.008**	-0.093***	-0.008	0.002
	(0.026)	(0.003)	(0.003)	(0.007)	(0.005)	(0.073)
CR	0.000	0.020	-0.010	0.025	0.023	0.017
	(0.028)	(0.021)	(0.017)	(0.039)	(0.023)	(0.018)
F-stat	1.57	1.49	38.7	65.37	1.88	0.47
Prob > F	0.2409	0.2185	0.000	0.000	0.1356	0.7578
R-squared	0.3255	0.0993	0.8156	0.9423	0.1726	0.0673
Adj R-squared	0.118	0.0326	0.7945	0.9279	0.0807	-0.0762
Root MSE	0.07588	0.05902	0.04525	0.05635	0.06836	0.11826
Observations	18	59	40	21	41	31

*Notes: "TDR=Total debt ratio; SIZE= Firm size; TANG= Asset tangibility; CR=Current; M&Q=Mining and quarrying; MANU =Manufacturing; TRADE=Trade; TRANSPORT=Transport, storage and communication; AUXFINASER=Activities auxiliary to financial intermediation, CSP= Community, social and personal services***, ** and * denotes significance at 1%, 5% and 10% respectively". Source: Authors estimates from Research Data, 2017*

Appendix C: Leverage and Performance: Industrial Sectors Analysis in 2014

2014	M&Q	MANU	TRADE	TRANSPORT	AUXFINASERV	CSP
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
Constant	0.843***	0.008	0.064	0.732**	0.249	0.168
	(0.167)	(0.066)	(0.114)	(0.296)	(0.158)	(0.162)
TDR	-0.324**	-0.213***	-0.253***	-0.464*	-0.227**	0.261
	(0.117)	(0.042)	(0.052)	(0.220)	(0.084)	(0.172)
SIZE	-0.126***	0.028**	0.021	-0.038	0.003	-0.092**
	(0.031)	(0.011)	(0.017)	(0.022)	(0.023)	(0.040)
TANG	0.030	0.074	0.225**	-0.101	-0.005	0.448**
	(0.230)	(0.067)	(0.103)	(0.155)	(0.103)	(0.180)
CR	-0.019	0.061***	0.050***	-0.099	-0.009	0.010
	(0.043)	(0.015)	(0.012)	(0.108)	(0.030)	(0.021)
F-stat	8.95	12.54	28.98	3.71	2.13	3.78
Prob > F	0.0011	0.000	0.000	0.0422	0.0984	0.0129
R-squared	0.7335	0.2863	0.8054	0.5974	0.1954	0.3277
Adj R-squared	0.6516	0.2635	0.7776	0.4363	0.1035	0.2409
Root MSE	0.11965	0.10062	0.04774	0.07392	0.10253	0.21817
Observations	18	130	33	15	40	36

*Notes: "TDR=Total debt ratio; SIZE= Firm size; TANG= Asset tangibility; CR=Current; M&Q=Mining and quarrying; MANU =Manufacturing; TRADE=Trade; TRANSPORT=Transport, storage and communication; AUXFINASER=Activities auxiliary to financial intermediation, CSP= Community, social and personal services***, ** and * denotes significance at 1%, 5% and 10% respectively". Source: Authors estimates from Research Data, 2017*